

EDITOR'S PROFILE of this issue

from a historical perspective ...

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

April, 1964:

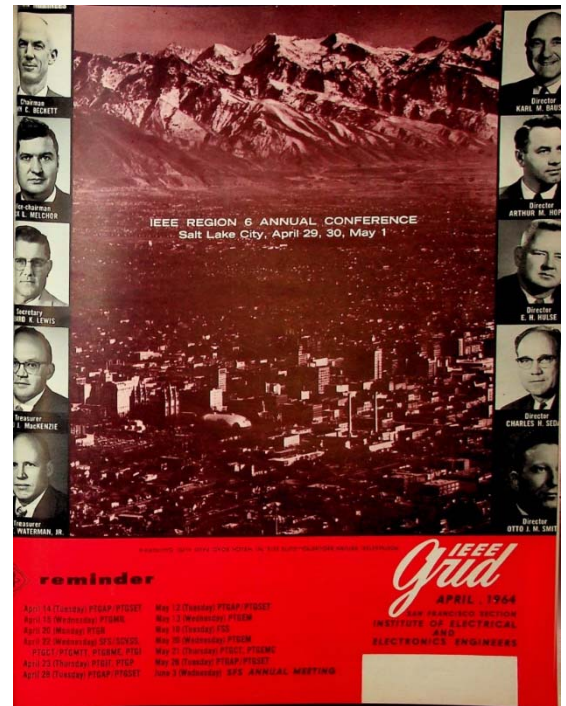
Cover: The photo of Salt Lake City (home to the 1964 Region 6 Annual Conference) is surrounded by photos of the 10 candidates for SF Section offices. Profiles of the candidates are on page 8. Mail-in ballots are due during May.

Page 4: The SF Section and the Santa Clara Valley Subsection host a Pioneers Night with seven panelists drawn from illustrious electrical/electronics pioneers of the early 20th century. Included are Ralph Heintz (first air-to-ground radio, and founder of Heintz & Kaufman, an early HF radio company from the '20's); and Leonard Fuller (Stanford's first EE PhD in 1919, chief engineer at Federal Telegraph, early carrier systems, dean of UC-Berkeley EE school – also grandfather of a friend of mine). I would like to have an audio recording (or transcript) of that event! A summary is in the June 1964 issue of the GRID, page 5.

Page 5: The SF Section's GRID reverts to a single issue a month.

Page 5: Finley Carter, retired president of Stanford Research Institute (SRI), recalls the then-popular Malvina Reynolds song "Little Boxes" to discuss the "ticky-tacky" construction as being a blot on California's reputation. His concern applies not only to architecture, but to power lines, antenna structures, lighting, acoustics, and other areas. We engineers are good with functionality, but we need better awareness of aesthetics. More information is on page 3 of the May 1964 issue of the GRID. I still play that song (about houses build on the hills of Daly City) on my guitar, and it gets some laughs and some nods of recognition!

Page 6: The Power chapter gets a preview of the Bay Area Rapid Transit (BART) train power and control system being planned for the test track room in the East Bay. The automated train-control system will be a challenge to design and build, as will the propulsion system and stability for the lightweight trains.



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.

July, 2021

Contact p.wesling@ieee.org



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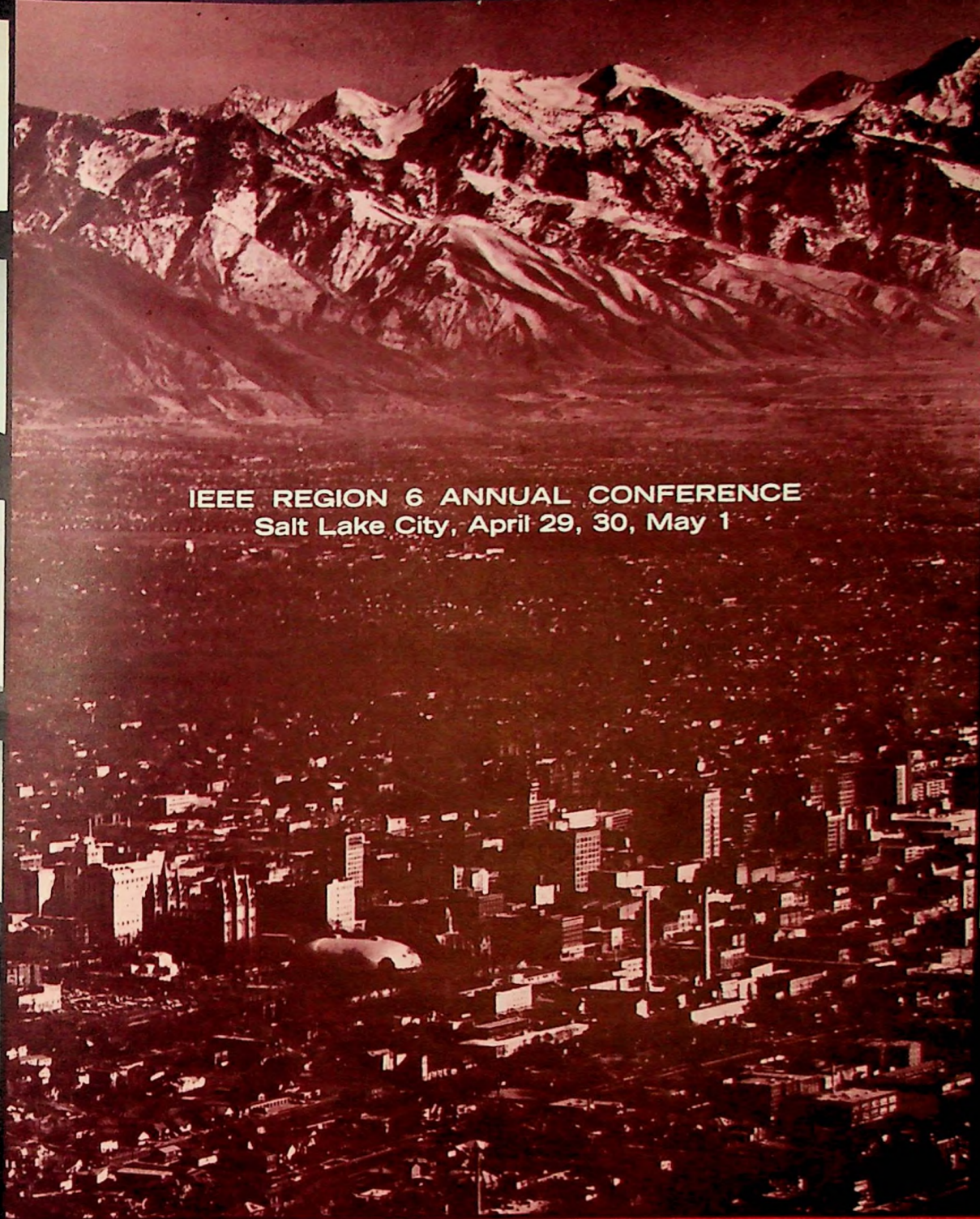
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IEEE REGION 6 ANNUAL CONFERENCE
Salt Lake City, April 29, 30, May 1

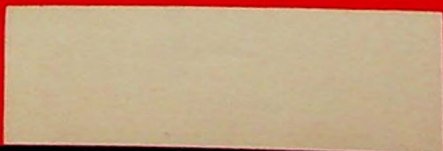
POSTMASTER: RETURN REQUESTED—SUITE 2212, 701 WELCH ROAD, FAIRO ALTO, CALIFORNIA

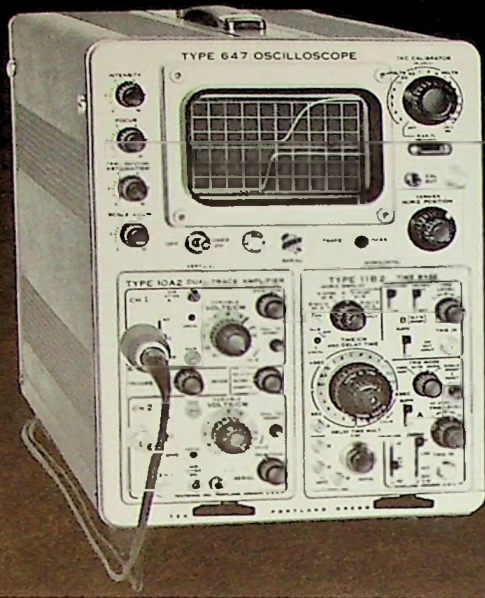
reminder

- April 14 (Tuesday) PTGAP/PTGSET
- April 15 (Wednesday) PTGMIL
- April 20 (Monday) RTGR
- April 22 (Wednesday) SFS/SCVSS,
PTGCT/PTGMTT, PTGBME, PTGI
- April 23 (Thursday) PTGIT, PTGP
- April 28 (Tuesday) PTGAP/PTGSET
- May 12 (Tuesday) PTGAP/PTGSET
- May 13 (Wednesday) PTGEM
- May 19 (Tuesday) FSS
- May 20 (Wednesday) PTGEM
- May 21 (Thursday) PTGCT, PTGEMC
- May 26 (Tuesday) PTGAP/PTGSET
- June 3 (Wednesday) SFS ANNUAL MEETING

IEEE
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APRIL, 1964
SAN FRANCISCO SECTION
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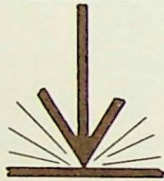
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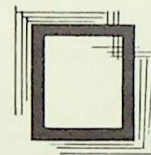
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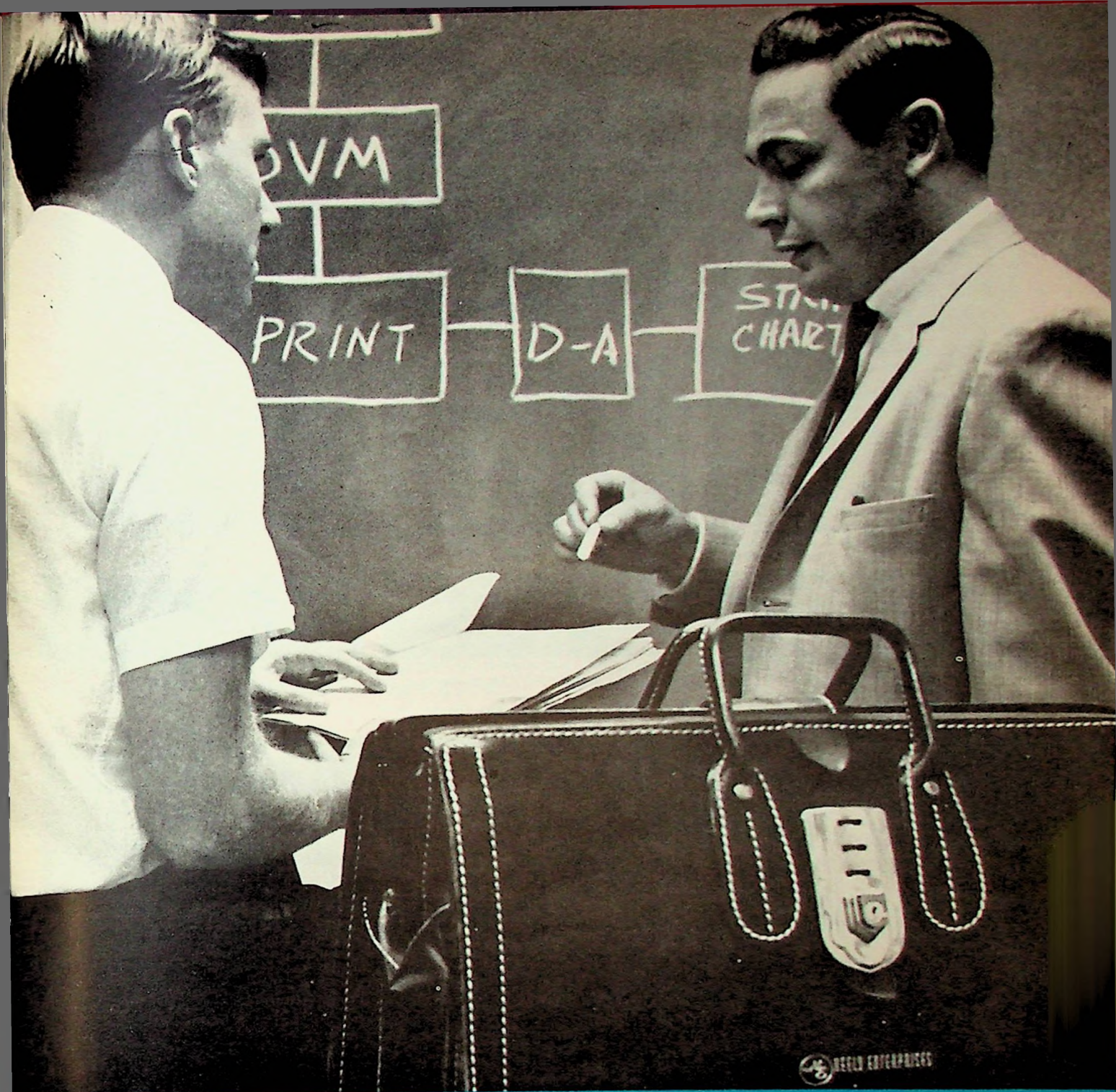
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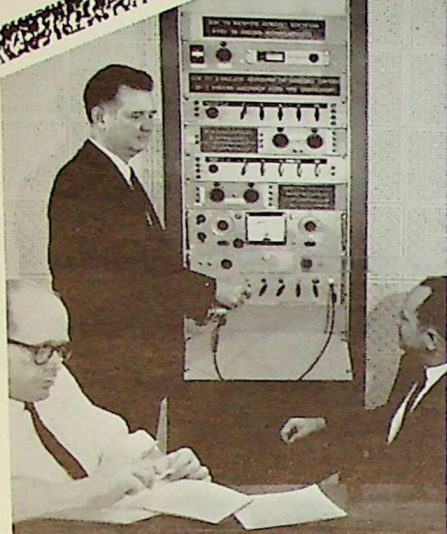
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SECTION MEMBERS! To stay on mailing list when you move, send address change promptly to IEEE Headquarters, Box A, Lenox Hill Station, New York 21, N.Y. Send copy of letter to Section Office.

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cover

The ten prominent San Francisco Section members shown have been nominated for 1964-65 office by a nominating committee consisting of Peter Lacy, Victor E. Kaste, Stanley F. Kaisel, and Robert E. Grady, all recent past chairmen of the predecessor IRE and AIEE sections. All

voting members within the section will receive their ballots early in May. Ballots should be marked and returned promptly to permit the tellers to complete their work in time for the annual meeting on June 3. For more on the nominees, see page 8. The view of Salt Lake calls your attention to the Region 6 Conference.

san francisco section officers

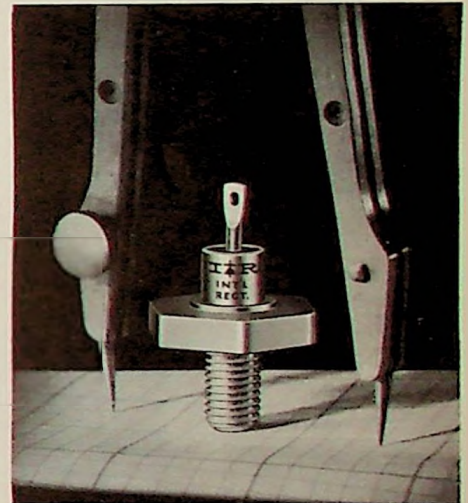
Chairman: William A. Edson
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Heintz

Fuller

meeting ahead

PIONEERS' NIGHT

Seven pioneers of electronic and electrical engineering will be the panelists at the April 22 joint meeting of the Section and the Santa Clara Valley Subsection at the Lamplighter Lodge, Sunnyvale. They are Ralph M. Heintz, Leonard F. Fuller, Charles A. Powell, Donald I. Cone, Joseph S. Carroll, Alert M. Opsahl, and Howard L. Melvin.



Carroll

Cone



Melvin

Harris

meeting ahead

BIREFRINGENT CRYSTALS

Dr. Stephen E. Harris of the electrical engineering department at Stanford will discuss the use of birefringent crystals to accomplish the synthesis of optical networks having arbitrary transfer functions, at a joint meeting of the PTG chapters on Microwave Theory and Techniques and Circuit Theory on April 22.

The technique may find use in the development of such optical communication components as narrow-band filters, equalizers and compensators, optical discriminators and radio detectors, and matched optical filters.

MEETING CALENDAR

SAN FRANCISCO SECTION

7:00 P.M. • Wednesday, April 22

(Joint with Santa Clara Valley Subsection—see below)

Pioneers of electronic and electrical engineering (a panel discussion on early engineering by the pioneers themselves)

Ralph M. Heintz (first air-ground radio), Leonard F. Fuller (early carrier systems and telegraph), Charles A. Powell, past president, AIEE 1945 (early utility systems), Donald I. Cone (early telephone systems power), Joseph S. Carroll (early power and corona studies), Alert M. Opsahl (first oscillograph in USA and lightning studies), and Howard L. Melvin (early power systems)

Place: Lamplighter Lodge, 820 E. El Camino Real, Sunnyvale

Social hour: 6:00 P.M.

Dinner: 7:00 P.M., \$3.50 including tax and tip

Reservations: Palo Alto and north—321-1332; San Jose and Sunnyvale—735-2226

Reservations close Monday, April 20, at 3:00 P.M.

SAN FRANCISCO SECTION

6:00 P.M. • Wednesday, June 3

California's "ticky-tacky" trend cries out for engineering of esthetics

Principal Speaker: E. Finley Carter, senior management counselor, and former president, Stanford Research Institute

Annual meeting honoring 1964 Fellows; installation of 1964-65 Section Officers; adoption of Section Bylaws

Social Hour: 6:00 P.M. Dinner: 7:00 P.M.

Place: Ballroom No. 4, San Francisco Hilton, Mason & O'Farrell, San Francisco

Reservations: Order tickets from Section Office, 321-1332. \$6.50, inc. tax & tip

Tables for 10 may be reserved for Subsections, PTG's, Committees, and Companies

FRESNO SUBSECTION

8:00 P.M. • Tuesday, May 19

Joint meeting with FSC student branch

Student engineering paper contest

Engineering students at FSC

Place: Room E-10, Engineering Bldg., Fresno State College campus

No dinner

SANTA CLARA VALLEY SUBSECTION

7:00 P.M. • Wednesday, April 22

(Joint with San Francisco Section—see above)

TECHNICAL GROUP

Industrial

7:30 P.M. • Wednesday, April 22

New developments in industrial lighting

H. L. Logan, vice president, research & development, Holophane Co., New York

Place: Room 232, PG&E Co., 245 Market St., San Francisco

No dinner

PROFESSIONAL TECHNICAL GROUP CHAPTERS

Antennas & Propagation

8:15 P.M. • Tuesday, April 14

(Four-part Tutorial Lecture Series: "Ground Portion of the Earth-Space Communications System." Joint with PTGSET, see below)

Lecture No. 1: S.C.F.

Jim Westcott, Philco WDL

Place: Lockheed Auditorium, Bldg. 202, Palo Alto

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

Reservations: Robert H. Light, 739-4880, Ext. 3318, 3319, by noon April 13

Antennas & Propagation

8:15 P.M. • Tuesday, April 28

Lecture No. 2: NASA Goddard tracking net

Paul Lantz, Goddard Space Flight Center, Greenville, Md.

Place: Lockheed Auditorium, Bldg. 202, Palo Alto

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

Reservations: Robert H. Light, 739-4880, Ext. 3318, 3319, by noon April 27

MEETING CALENDAR

Antennas & Propagation

8:15 P.M. • Tuesday, May 12

Lecture No. 3: D.S.I.F.

Dr. N. A. Renzetti, manager, deep space instrumentation facility, Jet Propulsion Lab at Cal Tech

Place: Lockheed Auditorium, Bldg. 202, Palo Alto

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

Reservations: Robert H. Light, 739-4880, Ext. 3318, 3319, by noon May 11

Antennas & Propagation

8:15 P.M. • Tuesday, May 26

Lecture No. 4: to be announced

Bio-Medical Engineering

8:00 P.M. • Wednesday, April 22

An artificial ear-brain system

Dr. J. L. Stewart, president, Santa Rita Technology, Palo Alto

Place: Room M-112, Stanford University School of Medicine

Dinner: 6:15 P.M., Red Cottage Inn, 1706 El Camino Real, Menlo Park

Reservations: Con Rader, 326-1970, Ext. 327, by April 21

Circuit Theory

8:00 P.M. • Wednesday, April 22

(Joint with PTGMMT—see below)

Optical network synthesis using birefringent crystals

S. E. Harris, W. W. Hansen Labs., Stanford University

Place: Room PH-100, Stanford University

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

Reservations: Pat Peters, 326-6200, Ext. 2414, by April 20

Circuit Theory

8:30 P.M. • Thursday, May 21

Using a computer to design filters—a summary of various approaches: some good, some bad

John Orchard, Lenkurt Electronics

Place: Ampex Cafeteria, 401 Broadway, Redwood City

Dinner: 6:00 P.M.—place to be announced

Reservations: to be announced

Electromagnetic Compatibility

8:00 P.M. • Thursday, May 21

Instrumentation for wide-band spectrum analysis

H. L. Halverson and A. Fong, microwave R & D lab, Hewlett-Packard Company

Place: Hewlett-Packard Auditorium, 1501 Page Mill Road, Palo Alto. Tour of facilities to follow; reservations required for tour

Dinner: 6:00 P.M., Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto

Reservations: Glenn D. Gillett, RE 9-4321, Ext. 24834 or 23268, by May 18

Engineering Management

6:00 P.M. (approx.) • Wednesday, May 13 and 20

Use of computer to play a management simulation game

Place: Hewlett-Packard Co., 1501 Page Mill Road, Palo Alto

Dinner: Box lunch, about \$1.50

Information Theory

8:00 P.M. • Thursday, April 23

An information theorist looks at biology

Dr. Solomon W. Golomb, California Institute of Technology, jet propulsion laboratory

Place: Stanford Research Institute, Bldg. 1, 333 Ravenswood Ave., Menlo Park

Dinner: 6:00 P.M., Villa D'Este, 3401 El Camino Real, Atherton

Reservations: Mrs. Kelly, 326-6200, Ext. 2945, by April 22

Microwave Theory and Techniques

8:00 P.M. • Wednesday, April 22

(Joint with PTGCT—see above)

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section news

GRID GOES MONTHLY

Beginning with this issue, the IEEE Grid converts once again to the monthly publication schedule observed during the first eight and one-half years of its existence, having been published twice a month since March of 1962.

Advertising and meeting ahead materials must be received by the 20th of the preceding month, calendar items by the 25th to appear in both the Grid and the bulletin board notice. A deadline of the 20th for all material is preferred.

meeting ahead

SECTION ANNUAL MEETING

The alarming spread of man-made ugliness in California recently has been a growing concern of its responsible citizens.

No one is more concerned than an eminent electrical engineer, E. Finley Carter, president emeritus of Stanford Research Institute. Mr. Carter notes that national magazine articles have been critical of our state, and that now we even have a popular song mocking architectural absurdities springing up across the landscape.

Finley Carter, a fervent Californian influential in civic and engineering affairs, is slated to display his deep convictions on this subject at the section annual meeting at the new San Francisco Hilton, June 3. His title: "California's 'Ticky-Tacky' Trend Cries Out for Engineering of Esthetics."

Why is this matter so important to the electrical engineer? Because, says Mr. Carter, the growing blot is not limited to architecture. Power and communications structures, forests of receiving antennas, transmitting antennas, lighting, air pollution, acoustics—these are but a few areas where California's EE's have done a functional job but definitely not an esthetic one. In Mr. Carter's view, their engineering is therefore incomplete.

The annual meeting speaker notes grimly that there have been untold papers and speeches on the "challenge" to the engineer, chiding him for not accepting his community "responsibilities." These appeals in general have fallen on deaf ears. So Mr. Carter says he doesn't intend to deliver a sermon; instead he will point in

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SYSTEM EFFECTIVENESS

Albert C. Reed, systems analysis section reliability department, Aerospace Corp., will be the speaker at the April 20 meeting of the PTGR chapter. The only measure of the real value of a system is the effectiveness of the system. This paper will be tutorial, tying together the experience of many people over many years. It will provide a working definition of system effectiveness, a mathematical exposition, and will describe the process of system development. System effectiveness studies may be used as a management tool for optimizing such program and system parameters as program cost, vehicle weight, redundancy of design schedules, space provisioning, etc. Applications of system effectiveness studies and related reliability parametric studies will be presented, and the system engineering process will be discussed in the light of system effectiveness concepts.

MEETING CALENDAR

(Continued)

Power

7:30 P.M. • Thursday, April 23

Engineering equipment design and development program for the San Francisco Bay area rapid transit program

John R. Asmus, chief electrical engineer, and Darrell W. Halligan, chief equipment engineer, both of joint venture company of Parsons Brinckerhoff-Tudor-Bechtel

Place: The Engineers' Club of S.F., 206 Sansome St., San Francisco
Dinner: Cocktails 5:30 P.M.; dinner 6:30 P.M.

Reservations: The Engineers' Club, GA 1-3184, by Monday, April 20

Reliability

8:00 P.M. • Monday, April 20

System effectiveness and the system engineering process

A. C. Reed, Aerospace Corporation, El Segundo, California

Place: Room 100, Physics Lecture Hall, Stanford University

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

Reservations: Tom King, 739-4321, Ext. 24211, by April 20

Space Electronics & Telemetry

8:15 P.M. • Tuesday, April 14, 28
May 12, 26

(Joint with PTGAP, see above)

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meeting ahead

BART EQUIPMENT DESIGN

John R. Asmus and Darrell W. Halligan will discuss the engineering equipment design and development program for the San Francisco Bay Area rapid transit project before the April 23 meeting of the PTC chapter on Power.

Mr. Asmus will discuss the engineering features of the Bay Area transit project as related to the power system, propulsion equipment, and the control and communications concepts. Mr. Halligan will discuss the stability problems with lightweight trains, the development of final car specifications, the scope of financing of the development and testing program, and the development of an automatic fare collection system.

With the possible advent of such innovations as a three-phase a-c trolley system or a high-voltage d-c trolley system, a completely automated train-control system requiring no operators, and equipment having performance characteristics in excess of any in existence, the entire project has an aura of stimulating challenge and excitement. The test track room to be built in the East Bay will become a proving ground for equipment and ideas new to the rapid transit industry.

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meeting of the S...
crowage Theory and Techniques and Circuit Theory on April 22.

The technique may find use in the development of such optical communication components as narrow-band filters, equalizers and compensators, optical discriminators and radio detectors, and matched optical filters.

Reservations: Robert H. Light, 739-4880, Ext. 3318, 3319, by noon April 13

Antennas & Propagation

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Reservations: Robert H. Light, 739-4880, Ext. 3318, 3319, by noon April 27



Westcott



Lantz

section news

NEW BYLAWS READY

Proposed bylaws for the merged San Francisco Section of IEEE have been completed under co-chairmanship of Victor Kaste and Peter Lacy, approved by the Operating Committee and the Executive Committee, and will be finally voted on by the membership at the June 3 annual meeting. A copy for study may be obtained by calling the section office.

ptgac news

1964 JAC CONFERENCE

The 1964 Joint Automatic Control Conference, sponsored by IEEE, ISA, ASME, AIChE, and AIAA, will be held at Stanford June 24-26 under the general chairmanship of Professor Gene Franklin of Stanford electronic laboratories, chairman of the PTG chapter on Automatic Control. Program chairman is Professor Lofti Zadeh, chairman of the electrical engineering dept., University of California. Local arrangements chairman is Richard C. Placone, assistant to the associate director of the Stanford lab. Seventy-six papers will be presented during 18 sessions, with bound preprints available prior to the conference.

meeting ahead

PTGAP TUTORIAL SERIES

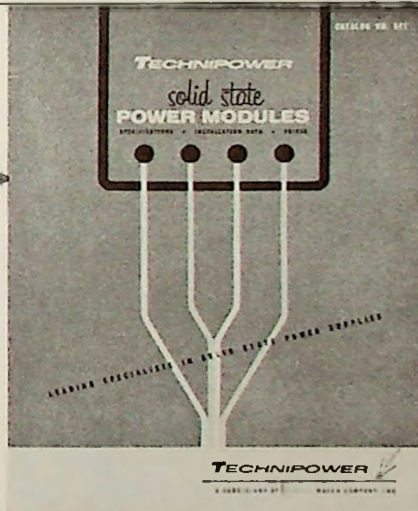
James P. Westcott, manager of the multiple satellite augmentation program at Philco's western development laboratory, will lead off the joint four-lecture tutorial series of the PTC chapters on Antennas & Propagation and Space Electronics & Telemetry on April 14. He will discuss the design of the USAF satellite control facility tracking stations planned for simultaneously tracking and processing the data from two satellites.

Second lecture in the series on April 28 will feature Paul A. Lantz of the Goddard Space Flight Center discussing NASA space data acquisition antennas. The presentation will review characteristics of antennas employed, including design features, performance data, and experimental models for low noise operation.

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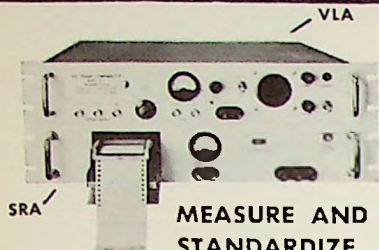
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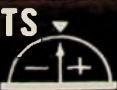
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section news

1964-65 OFFICERS NOMINATED

Nominees for Section office, shown on the cover, and their backgrounds are:

CHAIRMAN

John C. Beckett, present vice chairman of the IEEE section and past chairman of the AIEE section, a Fellow. A.B. in electrical engineering, Stanford (magna cum laude); E.E., Stanford; registered in electrical engineering in California, Oregon, Nevada; Westinghouse Electric Mfg. Co., U.S. Navy; S.F. Bay Area Rapid Transit District; Wesix Electric Heater Co.; numerous offices and committees of AIEE, including chairman, Pacific Energy Conversion Conference; Hewlett-Packard Co., Palo Alto.

VICE CHAIRMAN

Jack L. Melchor, present secretary of the IEEE section and past treasurer of the IRE section, a senior member. B.S. and M.S. in physics, University of North Carolina; Ph.D., University of Notre Dame, where he was a Fellow in high polymer physics, research associate, and instructor; Bendix Aviation Corp.; Sylvania Electronic Defense Laboratories; co-founder and first president of Melabs; director of Melabs, Applied Systems Corp., Astro Technology and -hp associates-. Author of many technical papers and holder of a number of patents; president of -hp associates-.

SECRETARY

Gerard K. Lewis, present treasurer of the IEEE section and past treasurer of AIEE section, a senior member. Graduate, industrial engineering, University of California; has served Allis Chalmers as sales representative, manager utility sales, manager Portland district office, and district manager; has served on executive, program, arrangements, membership committees of the AIEE section.

TREASURER

There are two nominees for the office of treasurer:

Fred J. MacKenzie, present membership co-chairman of the IEEE section, and former membership chairman of the IRE section, a member. Active in WEMA and WESCON, formerly active in Los Angeles Section. A member of the IEEE Committee on Membership and Transfers and former member of the PTGMIL Administrative Committee. University of Chicago and Technological Institute of Northwestern University. Administrative Engineer, Communication & Radio Physics laboratories, Stanford Research Institute.

Alan T. Waterman, Jr., former secretary and former treasurer of the IRE section, a senior member. Chairman of WESCON FES, 1963; Administrative

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Microwave, Catalog M—Parabolic antennas for use in 800 Mc to 12 Gc range with associated equipment; mounts, radomes, waveguides.

Heliac, Catalog H—Heliac, the flexible air dielectric copper cable in sizes up to 5" in 50, 75 and 100 ohms.

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Committee, PTGAP and associate editor of Transactions. Chairman of U.S. Commission 2, URSI, member of U.S. National Committee. A.B., Princeton; B.S., Cal Tech; Ph.D., Harvard. Associate professor of electrical engineering and associate director of systems techniques laboratory, Stanford University.

DIRECTORS-AT-LARGE

There are five nominees for the office of director-at-large, two of whom will be elected:

Karl M. Bausch, executive engineer, power and industrial division, Bechtel Corp. For eight years prior to present position was chief electrical engineer in the division, having been with the corporation for 25 years. Prior to that, served as consulting engineer designing electrical systems for major facilities in California. Assistant resident electrical engineer for the State of California on the construction of the Bay Bridge. A senior member, he has served the AIEE section in many capacities. A past president of the Electric Club and licensed in California, Washington, British Columbia, and Alberta.

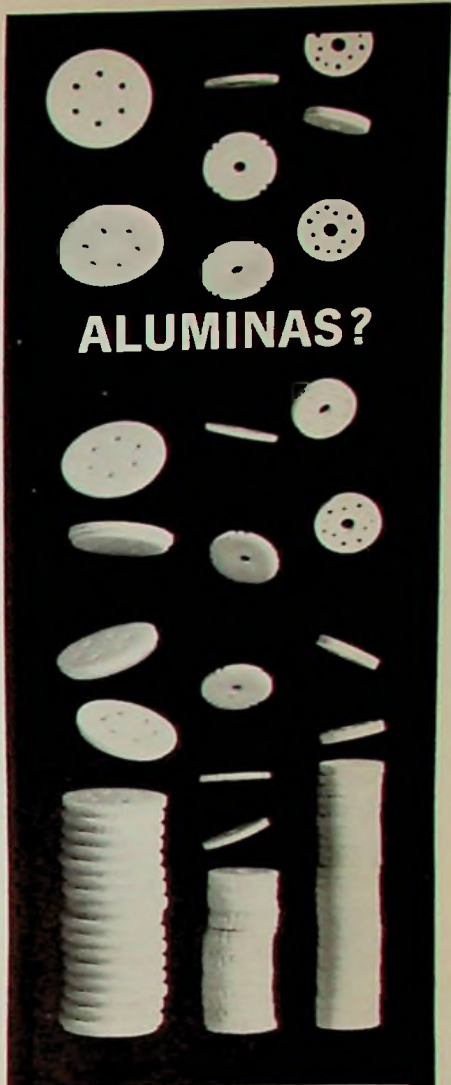
Arthur M. Hopkin, professor of electrical engineering, University of California at Berkeley, a senior member. Ph.D. and M.S. in electrical engineering, Northwestern Technological

Institute; B.S., Georgia Institute of Technology. U.S. Navy, Northwestern University. Author of numerous technical articles.

E. H. Hulse, co-chairman of the Education and Student Relations Committee of the IEEE section and former education chairman of the AIEE section, a senior member. Head, electronics engineering dept., Lawrence Radiation Laboratory, Livermore. B.S., University of California, Berkeley. A registered engineer in California and Utah. Westinghouse, UCLA, USC.

Charles H. Sedam, Pacific Gas & Electric, vice president-construction. B.S., electrical engineering, University of Washington. Inspector, foreman, assistant engineer, engineer, manager of station construction since 1941 with P.G.&E. Past president, San Francisco Electric Club, and the author of technical papers on engineering.

Otto J. M. Smith, professor of electrical engineering, University of California, Berkeley, a Fellow. A member of the Administrative Committee of PTGAC, WESCON technical program committee, section Awards Committee. Active for many years in IRE and AIEE affairs, local and national, and related groups abroad. Author of nearly 80 technical articles; holder of 9 patents.



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the section

MEMBERSHIP

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

P. C. Sundt	H. D. Warshaw
M. L. Tandon	S. E. Wauchope
A. W. Thompson	O. R. Welch
R. D. Tingleff	G. T. White
J. R. Tucker	C. E. Wilkerson
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E. M. Walker	D. B. Wolfersperger
C. A. Walton	P. K. Yee

K. G. Zaharoff

petroleum committee

11TH ANNUAL CONFERENCE

The 11th annual IEEE Conference of the Petroleum Industry will be held August 24-26 at the St. Francis Hotel, San Francisco, under the sponsorship of IEEE Petroleum Industry Committee. Chairman is R. B. Pearce; vice chairman, H. J. Grotts. Heads of committees are C. H. Sedam, arrangements; R. L. Mallatt, reception; D. Holloway, publicity; N. Howe, registration; W. J. Sokol, technical; W. J. Warren, printing and programming; W. L. Haslam, budget and finance; C. T. Gutleben, inspection and transportation; and L. D. Barter, fellowship and social.

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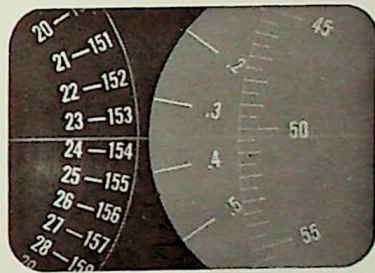
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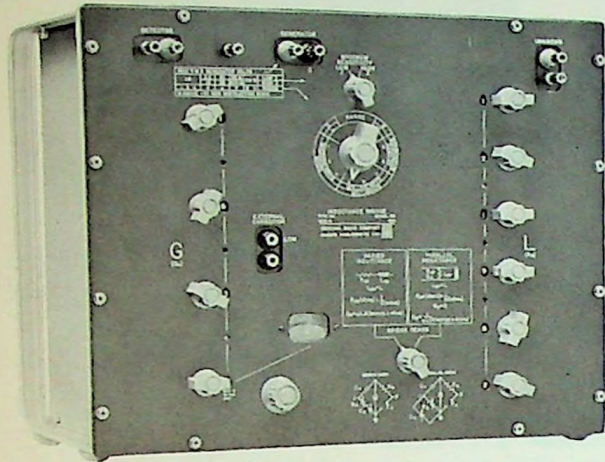
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Accurately and conveniently measures inductance under different conditions of dc and ac excitation. These incremental inductance measurements can be made while the inductor is operating in the circuit. Accuracy of $\pm 1\%$ for L; $\pm 2\%$ for R and Q. Has wide impedance ranges: L — 0.1 μ h to 1000 h; R — 10 m Ω to 1 M Ω . Indicates Q or R of inductor directly at any of nine frequencies between 50 c and 15.75 kc. Accepts applied signal of up to 1250 v ac or dc) at 7 amps; up to 50 amps with Type 1633-P1 Range-Extension Unit (\$125).



COMPLETE SYSTEMS

. . . for measuring the inductance and loss of coils with ferromagnetic cores at high dc and ac excitation levels. Each assembly includes a bridge, two 200-voltampere power supplies, rack, and interconnecting cables.

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For 60-cycle measurements

Contains: Type 1633-A Incremental-Inductance Bridge
Type 1265-A Adjustable DC Power Supply
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Inductance-Measuring Assembly . . . \$3450**

For measurements at 9 frequencies from 50 c to 15.75 kc

Contains: Type 1633-A Incremental-Inductance Bridge
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Write for complete information on any of these instruments

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