

EDITOR'S PROFILE of this issue

from a historical perspective ...

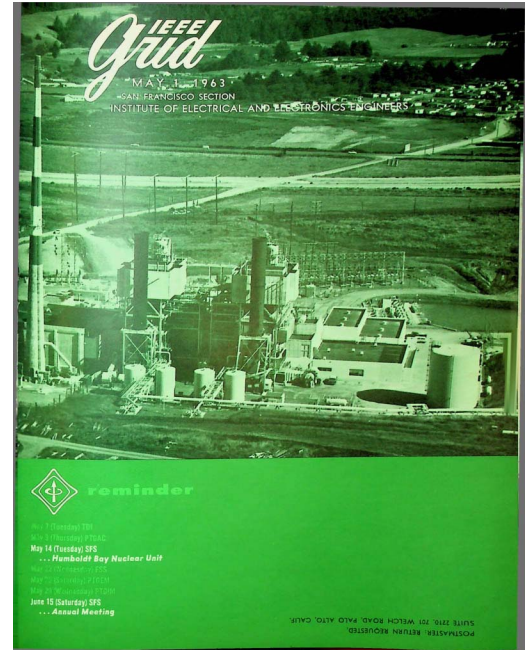
with Paul Wesling, SF Bay Area Council GRID editor (2004-2014)

May, 1963:

Cover: The boiling-water nuclear reactor on Humboldt Bay is shown as it comes on-line, to generate 60,000 kW of power for PG&E. It supplements the 5,000 kW reactor at Vallecitos, in the East Bay hills. More on page 6.

Page 8: The full text of Stanford Provost Fred Terman's remarks at the IEEE International Convention in New York City are shown. He is presented with the IEEE's Founders Award, one of the highest honors given by the IEEE. He discusses the AIEE/IRE merger, saying it was an unlikely marriage but seems to be going well. While the AIEE has been organized from the top-down, to assure coverage of all areas of electrical theory and practice, the IRE is more bottom-up in its approach, with a more or less spontaneous way of establishing groups that meet the individual participation and initiative of the members and their careers (similar to the Silicon Valley approach to the exploding nature of technology itself). The IEEE in my time is more akin to the old AIEE, with its rather authoritarian approach and control – it has lost much of the spontaneity of the Valley's early days (although the new idea of "Local Groups" may begin to provide balance). This speech makes good reading today.

Page 14: The Perham Foundation is in operation, preserving the radio and electronic historical materials collected by Douglas Perham from his early days at Federal Telegraph and beyond. One of the first objectives is to document and photograph the items in the collection. The Foundation asks for volunteers to take on some of this task.



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

IEEE *Grid*

MAY 1, 1963

SAN FRANCISCO SECTION
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS



reminder

May 7 (Tuesday) TDI

May 9 (Thursday) PTGAC

May 14 (Tuesday) SFS

... **Humboldt Bay Nuclear Unit**

May 22 (Wednesday) FSS

May 29 (Saturday) PTGEM

May 29 (Wednesday) PTOIM

June 15 (Saturday) SFS

... **Annual Meeting**

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critic, reformer (1819-1900)

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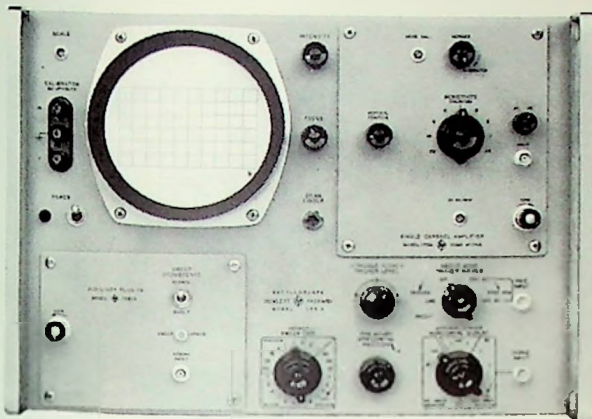
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cover

The world's largest natural-circulation boiling-water reactor and the nation's first nuclear plant which anticipates costs of generation of electricity competitive with a conventionally fueled plant in the same location is Pacific Gas & Electric's Humboldt

Bay power plant nuclear unit at Eureka.

The 50,000-60,000-kilowatt nuclear unit recently achieved criticality. For details of a section meeting devoted to this development, see the calendar and page 6.

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MEETING CALENDAR

SAN FRANCISCO SECTION

7:30 P.M. • Tuesday, May 14

"Humboldt Bay Plant Nuclear Unit—Design, Construction, Installation, and Operation"

Speakers: Harvey Brush, mgr., nuclear plant engrg-power and industrial division, Bechtel Corp.; A. J. McCrocklin, principal design engineer, Humboldt Bay Project, General Electric Co. APED; J. O. Schuyler, project engineer, Humboldt Bay Power Plant No. 3, Pacific Gas & Electric Co.

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

Social Hour: 5:30 P.M. Dinner: 6:30 P.M.

Reservations: Doug Dodds, EX 2-5353

SAN FRANCISCO SECTION

7:30 P.M. • Saturday, June 15

Annual meeting, dinner-dance

Place: Diablo Country Club, Danville

Cocktails: 7:30 P.M. (no host)

Dinner: 8:30 P.M. (New York steak)

Dancing: 9:00 P.M. to 1:00 A.M. to the music of the "Star Dusters"

Reservations: \$7.50 per person. Limited to 400 persons. Tickets may be served through Mrs. Doris Gould, Section Office, DA 1-1332, DA 1-1333.

No tickets sold after June 10.

FRESNO SUBSECTION

8:00 P.M. • Wednesday, May 22

(Joint meeting with the Fresno State College Student Branch of the IEEE)

Subject: Presentation of papers by Fresno State College engineering students

Place: Room 101, Industrial Arts Bldg., S.E. corner of Barstow Ave. and Campus Dr., Fresno State College campus

Parking: F.S.C. students must use regular student parking areas. Special arrangements have been made for all others to park in the "Restricted-Faculty Only" area immediately west of the Engineering Bldg., which is just south of the Industrial Arts Bldg. Enter area at Barstow Ave. and Campus Dr.

No dinner

TECHNICAL DIVISIONS

Industrial

8:00 P.M. • Tuesday, May 7

"Electrical Engineering Design and Construction in Australia Today"

Speaker: Darrel N. Walter, senior electrical engineer, Utah Construction & Mining Co., Palo Alto

Place: Pacific Gas & Electric Bldg., 245 Market St., Room 325, San Francisco

PROFESSIONAL TECHNICAL GROUPS

Automatic Control

8:15 P.M. • Thursday, May 9

"Optimal Re-entry Flight Paths"

Speaker: Dr. Arthur E. Bryson, Jr., professor of mechanical engineering, Harvard University, visiting professor, aeronautics and astronautics, Stanford University

Place: 126 Electrical Engineering, Stanford University

Dinner: 6:15 P.M.—Ming's, 4100 El Camino Real, Palo Alto

Reservations and information: Mrs. Pauline Eckman, DA 1-3300, Ext. 286, by noon, Wednesday, May 8, 1963

Engineering Management

9:00 A.M. • Saturday, May 25

Program: Management Decision-Making Game (special PTGEM meeting)

Place: IBM, San Jose

Reservations: W. D. Bolton, 227-7100, Ext. 2711

Instrumentation & Measurement

8:15 P.M. • Wednesday, May 29

Lecture No. 5: "Instrumentation for Man in Space"

Speaker, place to be announced

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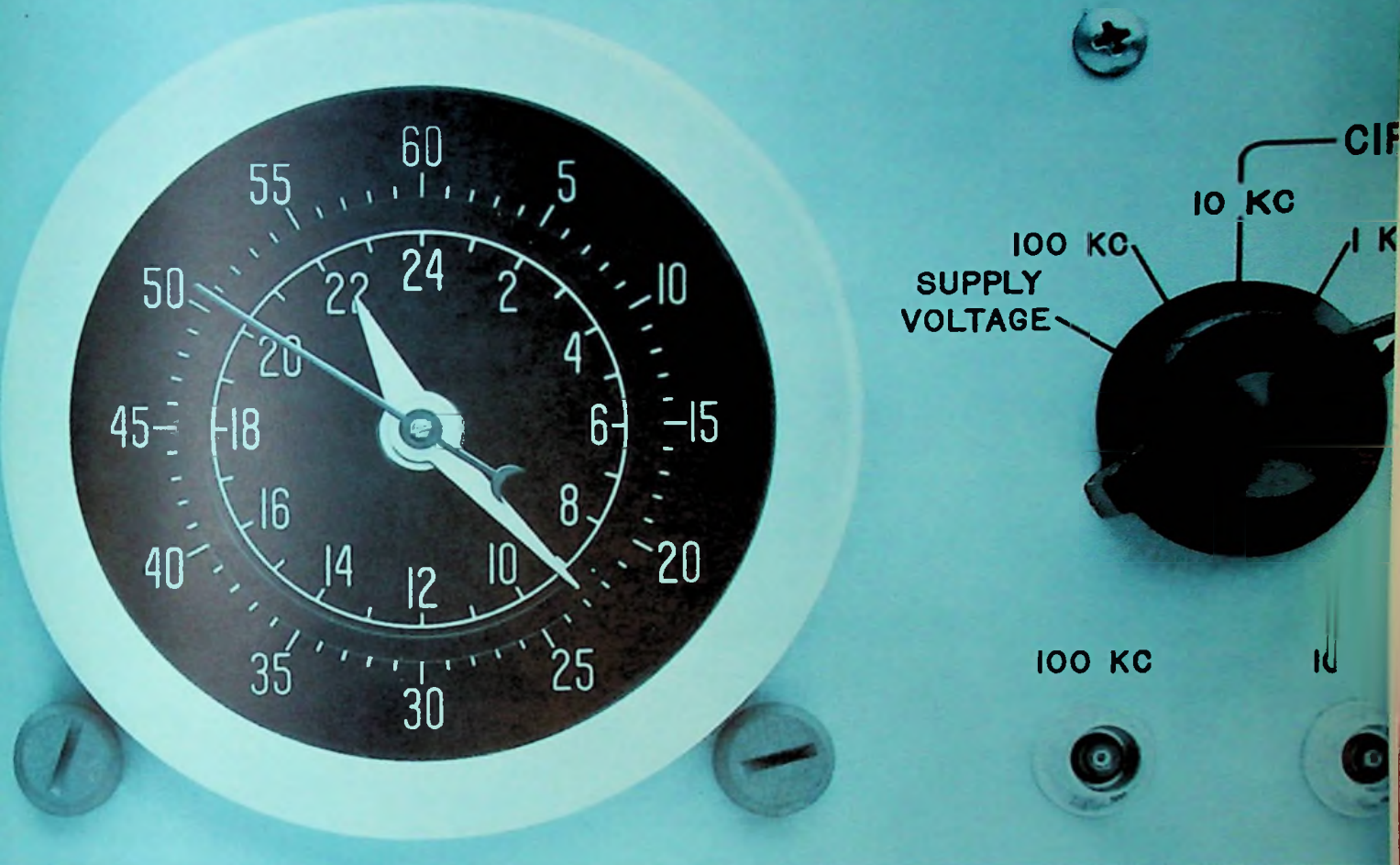
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Star attraction

meeting ahead

HUMBOLDT BAY

The design, construction, installation, and operation of P.G. & E.'s Humboldt Bay plant nuclear unit will be the subject of the San Francisco Section meeting to be held May 14 at the Engineers Club, San Francisco.

A free-wheeling panel discussion of the project structured to handle as many questions as possible from the floor will be led by Harvey Brush, manager, nuclear plant engineering-power and industrial division, Bechtel Corp.; A. J. McCrocklin, General Electric Co. APED, principal design engineer of the project; and J. O. Schuyler, project engineer, Pacific Gas & Electric Co.

Each panelist will cover his segment of the subject in fifteen minutes, followed by questions from the floor.

The unit sustained its initial chain reaction February 16. Startup at the 50,000-kilowatt atomic plant marked a milestone in progress for the nuclear industry. Criticality was the first step in a series of tests which will enable nuclear physicists to check out the operating characteristics of the nuclear core at low power levels prior to actual electrical power production.

Bechtel Corp. of San Francisco was prime contractor and engineer-constructor. The \$21 million plant features a nuclear reactor designed and built by General Electric's APED. It is the largest single-cycle, natural-circulation boiling-water reactor yet built—a 252-ton reactor pressure vessel measuring more than 40 feet high and 10 feet in diameter.

The plant is the first to employ pressure suppression containment fea-

meeting ahead

RE-ENTRY GUIDANCE

Professor Arthur E. Bryson, Jr., Harvard University, will discuss guidance for atmosphere re-entry at the May 9 PTGAC meeting.

The re-entry guidance problem is essentially one of bringing a hypervelocity vehicle through the atmosphere to a predetermined landing site, staying within the design limits on acceleration and heating. It appears this can be done satisfactorily, using only aerodynamic control (i.e., without retro- or control-rockets) if entry conditions within a certain "corridor" can be assured. The determination of satisfactory re-entry flight paths and feedback guidance schemes will be discussed with the aid of several illustrative examples.

The speaker attended Haverford College and Iowa State University (B.S. in aeronautical engineering, 1946) and served as an aircraft maintenance officer in the U.S. Navy in World War II. After the war he worked as a paper-mill engineer with the Container Corp. of America and then as a wind-tunnel engineer in the research department of United Aircraft Corp., before graduate study at Cal. Tech. He received the Ph.D. in aeronautics at Cal. Tech. in 1951 and then worked as an aeronautical engineer at the Hughes Aircraft Co. In 1953 he went to Harvard as assistant professor, was appointed associate professor in 1956, and professor in 1961. He has done consulting work for Raytheon, Lockheed, Boeing, Hughes, General Electric, Minneapolis-Honeywell, and Union Carbide. The author of nearly 40 technical papers on fluid mechanics, flight mechanics, and control, he is currently associate editor of the AIAA Journal and the SIAM Journal on Control, and a member of the AIAA Committees on Guidance and Control and Astrodynamics.

turing a simplified, compact design, which contributed to reduced construction and operating costs.

Plant output will be increased to at least 70,000 kilowatts, and the nuclear plant will produce electricity for about 8 mills per kilowatt hour.

More than 17 tons of uranium dioxide nuclear fuel will power the



Darrel N. Walter

meeting ahead

EE DOWN UNDER

Darrel N. Walter, senior electrical engineer, Utah Construction and Mining Co., will discuss Australia's electrical engineering and construction industry at the May 7 meeting of the Industrial Division.

The speaker, a graduate of Heald's Engineering College, spent three years as chief electrical engineer for Utah Australia Limited, a subsidiary of the firm, previously being a switchgear engineer with Westinghouse Electric Corp. at the Sunnyvale plant.

He will discuss organizing the electrical portion of an engineering and construction company in Australia along American lines, and the electrical systems and equipment used in high-voltage substations, a soup plant, a reclaimed rubber plant, and a ferromanganese arc furnace, the largest of its type in the world.

Humboldt plant. The fuel was fabricated into 8,428 stainless-steel clad rods and assembled into 172 fuel bundles by G.E.

Major plant construction began about two years ago. Although this is the first full-scale nuclear plant to start up in California, it is the second atomic plant to supply atomic-generated electricity for the P.G. & E. system. P.G. & E. joined with General Electric in 1956 when a developmental boiling-water reactor was built at G.E.'s Vallecitos Atomic Laboratory. P.G. & E. supplied a 5,000-kilowatt turbine generator for the facility to help produce this country's first privately financed atomic-electric power in 1957.

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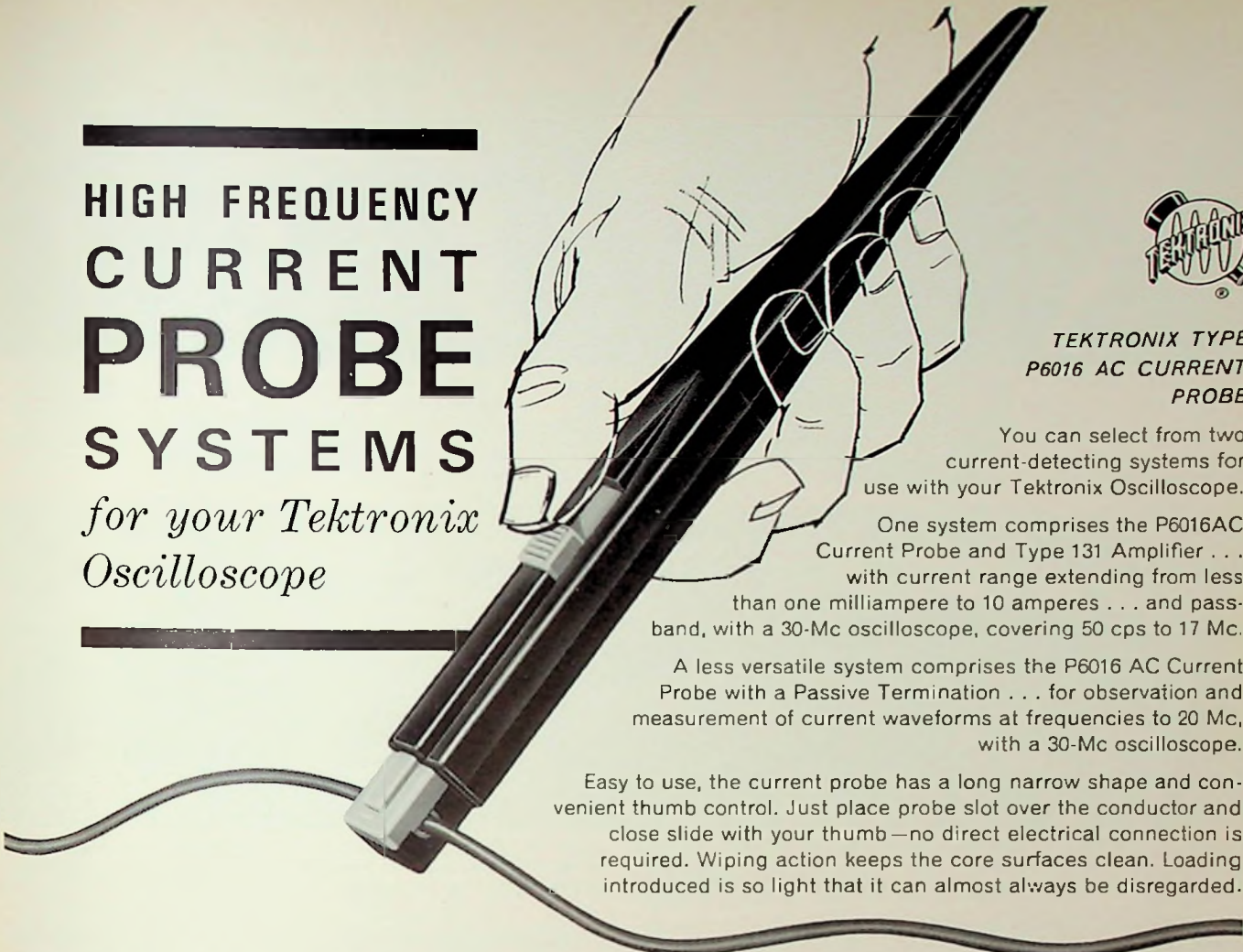
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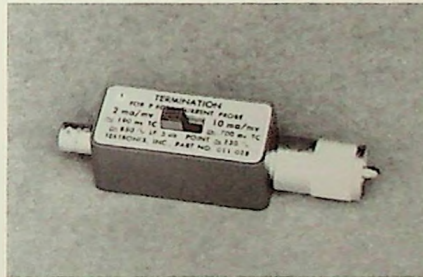


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Prize award winners honored at the March 27 IEEE banquet included three members of the San Francisco Section in addition to Dr. Frederick E. Terman. Left to right are William E. Erans, engineering manager, research and development lab. A. B. Dick Co., Palo Alto, Zworykin Award; Allen H. Schooley, Washington, D.C., Section, Diamond Award; Dr. Ernst Weber, president of IEEE; Leonard

Lewin, UK Section, Baker Award; Ian Munro Ross, Pennsylvania Section, Liebmann Award; Philip J. Rice, Jr., manager, physical electronics lab, Stanford Research Institute, Zworykin Award; and Chih-Tang Sab, head, Fairchild Semiconductor Div., Fairchild Camera and Instrument Corp., Palo Alto, Thompson Award.



Marquee of New York's Coliseum signaled first IEEE Show, attended by more than 70,000 registrants from forty countries. During 54 technical sessions 250 papers were presented, covering new develop-

ments in 29 branches of the art, ranging from space electronics to artificial intelligence and from biomedical electronics to educational television.

consolidation notes

UNPARALLELED OPPORTUNITY

The following remarks were delivered by Frederick E. Terman, provost and vice president of Stanford University and fellow of IEEE, on the occasion of the IEEE International Convention banquet on March 27 at the Waldorf-Astoria Hotel, New York. At the same event Dr. Terman, chairman of the San Francisco Section in 1939, was presented the Founders Award, one of the highest given in IEEE, "for distinguished leadership in the organization and administration of, and contributions to, scientific research and education."

The merger of the Institute of Radio Engineers and the American Institute of Electrical Engineers into the IEEE represents a union between two high-spirited institutions which for over fifty years had each lived alone and liked it. Considering the age and the long record of independence of the parties involved, this was a most unlikely marriage, irrespective of the logic and common sense that favored such a union. I therefore salute those who negotiated the difficult and complicated marriage pact; their job was not easy, but it was well and effectively done.

The honeymoon is, tonight, eighty-six days young. My scouts report that it is going better than one might have predicted but that, not surprisingly, there are still problems of adjustment that remain to be worked out.

The consolidation and relocation of the headquarters staff is complete and the policy-making machinery of the board of directors and the executive committee is running smoothly. The few rough spots that have developed to date appear to be solvable within the framework provided by the new constitution and bylaws. Practically all local section activities of the two parent societies will have been merged by midsummer. Student branches present no difficulty, since many of them have for years been operating on a joint basis.

However, there still remain problems—real problems—to be worked out, and some of these will take a combination of imagination, tolerance, and, above all else, time. A prime example is provided by the technical committee structure in-

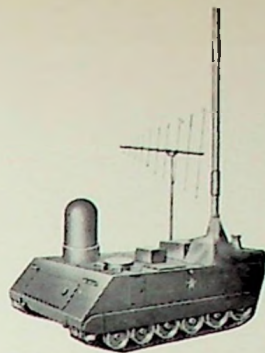
herited from the AIEE on the one hand, and the professional group system coming from the IRE on the other.

At the time of the merger, the committee structure of the AIEE involved 96 committees with members appointed by the society management. The responsibilities of these various committees were so assigned from the top that the entire range of technical interests of the society was covered.

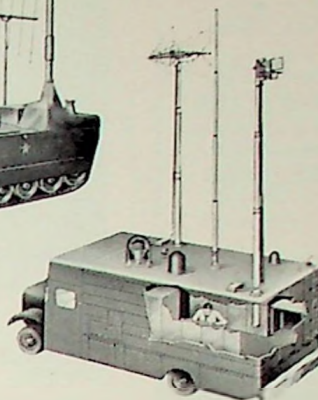
In contrast, the professional groups of the IRE were largely autonomous in operation, and represented activity units that had been established in a more or less spontaneous manner by groups of members who desired to organize a subsociety around their own technical and administrative interests. The professional groups were thus voluntary associations of members; they elected their officers, often sponsored independent technical meetings, and had their own publications.

Through the marriage of the two parent societies these two types of

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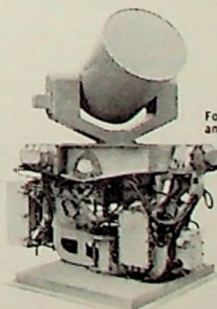
Ultra-stable signal source, 40 mc to 40 Gc — Air Force



Panoramic data receiver, 1-10 Gc Air Force



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UNRETOUCHED PHOTO OF OUTPUT PULSE,
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(Horizontal scale: 5 μ sec/cm)



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Model	Center Freq.	Band-width	Dynamic Range	Risetime Capability
L0502	5 mc	2 mc	80 db	0.5 μ sec
L1003	10 mc	3 mc	80 db	0.3 μ sec
L1505	15 mc	5 mc	80 db	0.2 μ sec
L2005	20 mc	5 mc	80 db	0.2 μ sec
L3002	30 mc	2 mc	90 db	0.5 μ sec
L3010	30 mc	10 mc	80 db	0.1 μ sec
L6002	60 mc	2 mc	90 db	0.5 μ sec
L6010	60 mc	10 mc	80 db	0.1 μ sec
L6020	60 mc	20 mc	80 db	0.05 μ sec
L7002	70 mc	2 mc	90 db	0.5 μ sec
L12020	120 mc	20 mc	80 db	0.05 μ sec

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The 2 1/4 miles of exhibits, covering the latest technical developments of 860 electronics firms, displayed some 25,000 different pieces of electronic apparatus, much of it in actual operation, requiring one and a half million watts of electrical power a day to keep it going. A portion of one of four floors is shown here.

beings—formerly strangers to each other—suddenly became brothers living in the same house. Under such circumstances it is only natural that initially some stresses and strains should develop. There is nothing involved here that men of good will cannot resolve, but as I have said this will take tolerance and continuing patience. Also, one must anticipate that considerable time will elapse before the appropriate roles, responsibilities, and opportunities of each unit of each group become defined in a way that is clear to each individual society member, and before all unnecessary duplication and rivalry are eliminated.

In the long run, I anticipate that from this dual structure there will emerge a coordinated system that will give the IEEE unparalleled strength. Through the technical committee approach the corporate body of the IEEE possesses the means of developing a technical conscience. At the same time, the professional group system provides an almost unlimited outlet for individual participation and initiative. The professional group system also provides a flexibility, and an opportunity for experimentation with a minimum of regimentation from above, that will serve effectively as a cement for holding the IEEE together as a coherent organization. Although the members of the IEEE have a common educational background based on electrical engineering and electronic science, they deal with an exploding technology that is in intimate contact with almost every facet of the extremely diverse industrial and scientific activity of this na-

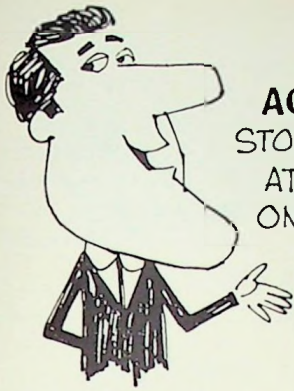
tion. Without the outlet provided by the professional group system, the IEEE could very well in time break up into innumerable fragments.

Another problem faced by the IEEE is less tangible, but to me is of even greater importance. This is the necessity of establishing in the mind of each individual member a personal identification with IEEE as his organization. While it must be recognized that all of us will inevitably have sentimental remembrances of past association with either IRE or AIEE activities, it is important that in the future each of us identify ourselves directly with IEEE, rather than think of ourselves as an IRE or AIEE component of IEEE.

In the initial critical months and years immediately ahead it is therefore extremely important that those who have similar interests, but who have come into the IEEE from separate parents, be brought together in technical committees, or in professional groups, or in joint committee-group cooperative enterprises. If this is not done, and done well, the IEEE could easily come to be regarded by the individual as being a vague entity existing somewhere in outer space so far removed from the ordinary member as to be outside of the range of his personal interest and loyalty.

Finally, it is to be noted that the IEEE possesses an unparalleled opportunity to make an important contribution to the public understanding of technology and its role in our nation. Our 160,000 members represent by far the largest organized group concerned with engineering and the

THE CLASSIFIED ENGINEER



ACTUALLY, THE
STORY OF MY CAREER
AT HUGHES BORDERS
ON THE FANTASTIC



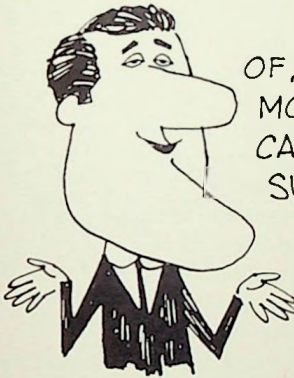
IN 1958, I WORKED
ON THE ██████████
THE ONE THAT
██████████



LAST YEAR, I WAS
RESPONSIBLE FOR THAT
GIANT BREAKTHROUGH
ON ██████████ ██████████



AND LARGELY
BECAUSE OF ME,
MANKIND WILL ██████████
WITHOUT
EVEN ██████████



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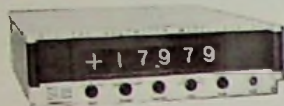
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Hill

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wescon news

INDUSTRIAL DESIGN

Wider public recognition of Wescon's industrial design award program is assured for the fifth annual exhibition in connection with the 1963 Wescon next August 20-23 at San Francisco.

Show Director John A. Chartz and Frederick C. Hill, this year's industrial design committee chairman, have issued a joint announcement that a special exhibition of outstanding entries will be held at the San Francisco Museum of Art for a month preceding the start of Wescon.

Through an arrangement with the museum and its director, George D. Culler, some 20 entries chosen for awards of merit will go on display in a main gallery of the museum in San Francisco's Civic Center, July 20 to August 19.

In past years there have been around 200 entries for the attention of an initial judging by a professional panel, which reduces the field to 20-odd selections for "Award of Merit" honors. The selections this year will be invited for exhibition at the museum and at Wescon.

Immediately upon the close of the museum dates the exhibit will be moved to the Cow Palace and set up in the north annex, which also will house the technical sessions, for the duration of Wescon week.

Hill, who is directing the ID committee activities this year, is manager of advertising and promotion for Lenkurt Electric Co., Inc., of San Carlos, Calif. Vice chairman is Donald W. Brundage of Brundage Associates, San Francisco, who has worked on two prior Wescon ID committees.

Walter Landor of Walter Landor & Associates, San Francisco, will work closely with Brundage in planning and carrying out the two judging chores.

Exhibit planning is headed by Emmett M. Brownell, marketing promo-

tion manager for Varian Associates, who is being assisted by Merle J. Grossmeyer, graphic designer for Lenkurt Electric, and Robert F. Jensen of Exhibit Design Associates, San Francisco.

Wendel J. Hans, senior engineer in product design at Ampex Corp., serves as committee secretary, and promotional activities are being handled by David B. Kirby, director of public relations for Hewlett-Packard Company.

MORE CONSOLIDATION

practical applications of science, that exists in the United States. The IEEE members moreover deal with an aspect of our industrial technology that is remarkably dynamic and which is developing with unparalleled rapidity. Finally, the IEEE membership is more strongly oriented toward intellectual activity of high level, and is less bound by the traditions and practices of the past, than any other group of significant size oriented toward engineering and applied science.

For these reasons the IEEE can, if it wishes, be an important influence in a nation that is becoming increasingly dependent on an advanced technology. The voice of IEEE can be loud, constructive, and authoritative on such matters as: (1) the rich values that can come to us through investment in research and advanced development, (2) the vital importance to this nation's future of scientific and technical education of the very best quality and carried to the highest level, and (3) the dignity and social value that is associated with the work of the engineer and the applied scientist, and the satisfactions that come to the individual engaged in such work. On these and other similar non-political issues, IEEE is in a position to clarify public thinking, and to focus attention on important issues and problems.

I therefore hope that the voice of IEEE will be heard loudly and clearly, as an important and active interpreter to the public of this new technologically oriented civilization toward which the electrical and electronic scientist and engineer has contributed so very much.

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The Multi-Sweep Model Video 300 is a wide range video-vhf sweeping oscillator which provides a full 300 mc of swept-frequency output by all-electronic frequency modulating techniques. It provides a linear swept frequency output, AGC'd for constant output over the frequency band. The Multi-Sweep Model Video 300 includes provision for the insertion of external oscillators to generate variable birdie-bypass type markers on all frequencies. A calibrated frequency dial permits the use of the unit as an IF-VHF oscillator with continuously variable center frequency and sweep width.

- 300 mc to less than 1.0 mc in single sweep

Sweep Frequency Range

The Model 300 is a wide-sweeping swept frequency oscillator with high and undistorted output, essentially free of spurious signals. Over the entire sweeping range, it generates a 0.5 volt (rms into load) output which is held constant to within ± 0.25 db by a fast-acting automatic gain control circuit. The RF output is monitored by a calibrated panel meter.

- All electronic

Sweep Rate

The repetition rate of the sweep may be locked to the nominal line frequency or varied around this frequency for hum checks. A manually-controlled swept output provides a means of varying c-w signal in sync with the oscilloscope display. The manual control covers the same frequency range to which the Model 300 is set for electronic sweeping.

- All solid state

Advanced Design

The Multi-Sweep Model 300 employs recently developed techniques in providing a compact and versatile instrument. All elements, including the frequency modulated source and its means of modulation use recently developed solid state circuits. Careful isolation and buffered outputs provide for excellent waveshapes and clean, reliable outputs.

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SPECIFICATIONS

- Built-in detector

Frequency Range: Continuously variable 1 mc to 300 mc.

Markers: Provision for birdie-bypass markers derived from external oscillators. Separate level control and output.

Sweep Width: Linear, continuously variable 200 kc to 300 mc. CW operation.

Attenuators: Switched 20,20,20,10,6,3 db plus variable 6 db.

Sweep Rate: Variable around line frequency, locks to line. Manual control.

Power Supply: Input approx. 20 watts, 117 volts ($\pm 10\%$), 50-60 cps ac, regulated.

- Stable narrow sweeps

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Dimensions: 6 $\frac{3}{4}$ " x 15 $\frac{1}{2}$ " x 13 $\frac{1}{2}$ ".

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Electronics pioneer Douglas Perham and portion of display of early radio and electronic artifacts.

historical notes

CALL FOR VOLUNTEERS

The historical committee of the section has embarked upon a project to inventory and document the Perham Foundation electronic collection. A photographic record of each display and a documentary tape record of each item will be made. The committee is asking for other IEEE members to volunteer their help if they would like to assist in this undertaking. For further details call Ralph Heintz, Jr., at SRI, DA 6-6200.

The Perham Foundation was founded in January, 1960, as a non-profit corporation to own and operate a museum and educational facility for the collection, development, and preservation of radio and electronic historical materials. In January of this year the foundation elected a new board of directors and acquired title to the Douglas Perham electronic collection.

meeting ahead

ANNUAL MEETING SET

Plans for the first IEEE annual meeting, a dinner-dance with no speaker and as little business as possible to facilitate acquaintance of the membership, have been completed by a committee consisting of Harold T. Zamzow, William H. Peterson, and James D. Warnock.

The event, to be held Saturday, June 15, at the Diablo Country Club, Danville, will begin with no-host cocktails at 7:30. A New York steak dinner will be served at 8:30 p.m., with dancing following from 9:00 p.m. to 1:00 a.m.

Reservations at \$7.50, limited to 400 persons, may be made by calling Mrs. Doris Gould in the Section Office, DA 1-1332 or DA 1-1333, no tickets being sold after June 10.

SCIENTIFIC AND TECHNICAL CONVENTIONS

Written and submitted some time before the attendee appraisal of WESCON carried in the April 1 issue. Lou Fein's article relates only indirectly to WESCON and the IEEE Show, but is a general critique of dozens of technical shows and conventions attended every year by IEEE members.

I hold a view that I believe is widely shared by members of various technical societies: that too many papers at technical meetings are inferior or irrelevant, or conceal sales pitches.

Such papers are at least as harmful to the reputation of the sponsoring societies as to the reputation of the speaker. They waste the time of those who have come seeking information on advances in knowledge in their professional field of interest, not data on competitors' product lines. Vendors probably gain little; a sales pitch that must be disguised in a technical paper can be expected to produce both an inferior sales pitch and an inferior technical paper.

Why does this situation exist? Here

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are five explanations commonly given:
 1) At many technical meetings, n days are allocated for formal talks; thus, the program chairman's first obligation is to fill up these n days. The quality and relevance of papers become secondary considerations.

2) A minority of attendees are mainly interested in technical advances; most attendees comprise recruiters and job seekers, equipment shoppers, and vendors (the largest group), professional committeemen, etc. The excellence of the technical program is of little interest to this majority group.

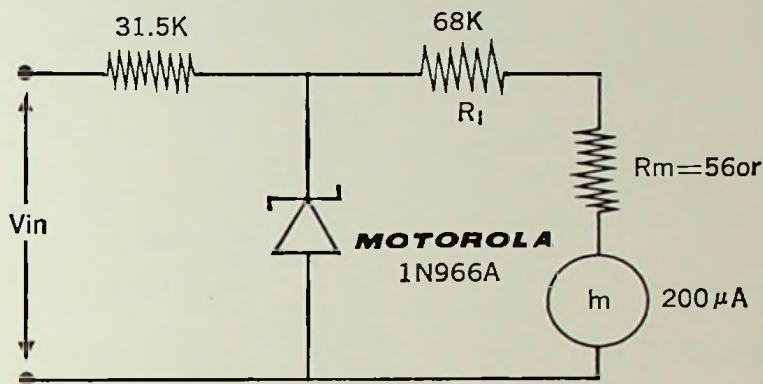
3) More and more meeting places are turning into exhibit halls with technical sessions being mere supplements to them. If the same energy, time, and talent were devoted to procuring and screening outstanding papers that are devoted to exhibits, the situation would be better.

4) Selection of good papers from abstracts alone is impossible; only full papers should be considered as nominees to be screened by competent committees whose members give adequate time to the job.

5) There are many more meetings devoted to particular fields than there

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With the applied voltage of 20 volts, the 200 microampere current in the circuit across the $68.5K$ ($R_1 + R_m$) produces a drop of 13.7 volts, a value just below the low end of the 10% tolerance of this 16 volt Zener. A further increase in voltage causes the Zener to conduct and the overload current is shunted away from the meter. Overloads of 10 to 1 (200 volts input) only increased the meter reading by 1.8%.

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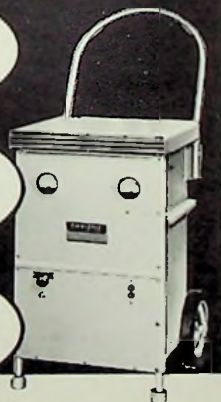
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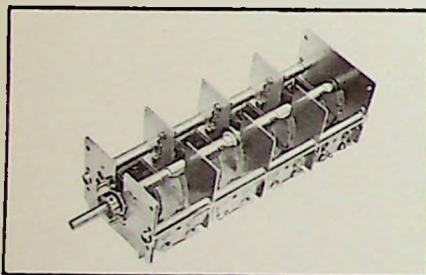
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are good papers in these fields. Research results just cannot be scheduled. If this is so, then no amount of energy in procurement or screening will be fruitful. The only solution is to cut down the number of meetings.

Whatever the diagnosis, the following proscription is recommended. (It will be seen that some of these suggestions have on occasion been taken up at various conferences):

At each conference there should be four kinds of technical sessions: formal lectures, formal seminars, sales-oriented lectures, and sales-oriented seminars.

Formal Lectures: These may be followed by questions from the floor or by panel discussion or both. The main criteria for selection of a lecture paper should be that it is relevant and new and that it has substantial and significant technical content—or that it is a labeled tutorial or survey paper.

The fragmentation of a meeting into equally timed sessions having equal length papers about similar subject matter should not be rigidly adhered to unless a set of papers is coherent. The objection to devoting a whole morning or afternoon session to unrelated papers on magnetics or in-out equipment or logic design is that it influences the selection of papers on the criterion that the session must be filled up even if it means selecting inferior or irrelevant papers on that subject. Just as good papers on that subject may be rejected if the allocated morning or afternoon session has already been filled.

All papers satisfying the criteria of relevance, novelty, and significance should be accepted. The length of a paper should not be a consideration; papers could be as short as five minutes or as long as an hour. Only after the papers have been selected should the format of the meeting be determined. There are two possibilities to be dealt with.

At one extreme, the number of acceptable papers exceeds the number that could be delivered in n days even if concurrent sessions were held. If this occurs, the accepted papers for which there is not time for delivery should be read by title and, at the author's option, should be included in the Proceedings of the conference.

At the other extreme, there might not be a sufficient number of acceptable papers to fill up even one day. If this occurs, only the few acceptable

papers should be scheduled for delivery. The remaining time may be devoted to formal seminars.

Formal Seminars: At the option of the program chairman seminars on various timely, interesting, and relevant topics should be scheduled. Seminar leaders should be selected as are panel members and session chairmen for the formal lectures. Seminar sessions may be more attractive to some attendees than the formal lectures, simply because formal lectures, however well screened, are bound to be somewhat dated; seminar material is bound to be current.

Sales-Oriented Lectures and Seminars: These should be viewed in the same light as exhibits. A certain amount of time and space should be available for sales-oriented technical lectures and seminars. Like exhibitors, these lecturers or seminar leaders should pay a fee for the forum provided by the conference. This policy would provide additional income to the sponsoring organizations and it should discourage vendors from trying to use the other sessions as sales forums. Just as the exhibitor's fees are a small part of his cost of exhibit-

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ing, so a lecture or seminar fee would also be a small part of a vendor's cost of preparing and giving the lecture or seminar. In addition, scientists or engineers preparing for such lectures and seminars would have the cooperation of company sales and legal departments rather than the resistance that is now encountered when they (the engineers and scientists) try to get clearance from these groups to include certain quasi-proprietary material in their presentation. For these reasons, vendors would probably welcome the opportunity to take advantage of such forums.

Last-Minute Lectures or Seminars: Only shortage of time or space should preclude the acceptance of formal or sales-oriented lectures or seminars up until the last minute, provided that other requirements for acceptance have been met. Program chairmen should be responsible for screening the last-minute offerings which may be more timely and significant than papers reporting results obtained before an established deadline which is usually many weeks before a conference starting date.

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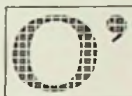
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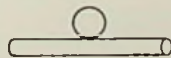
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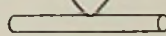
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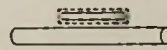
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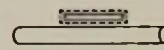
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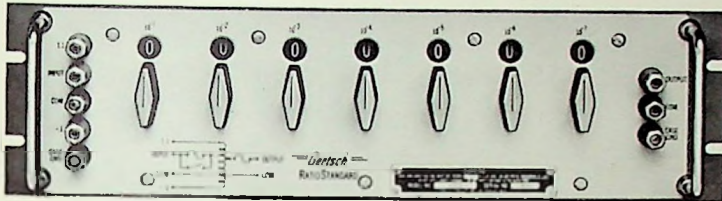
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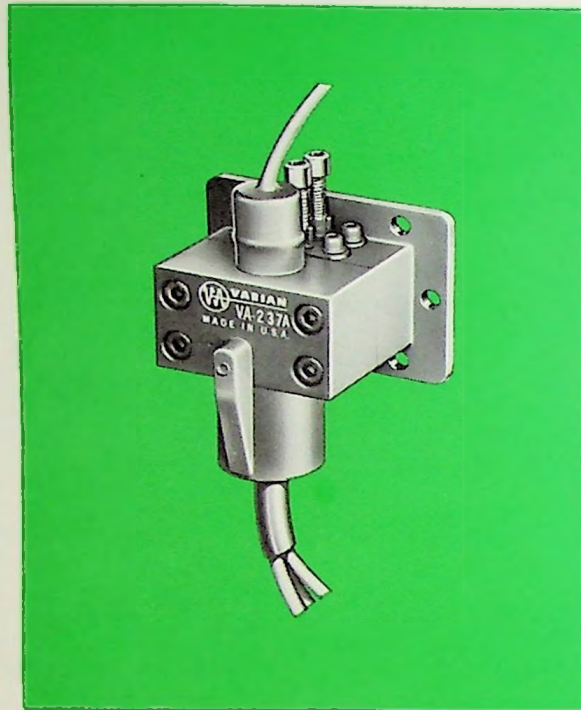
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