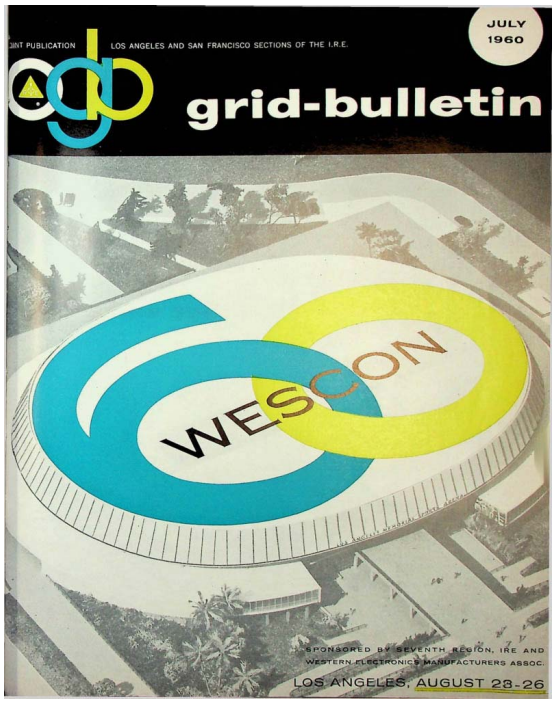
EDITOR'S PROFILE of this issue

from a historical perspective …

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



July, 1960:

Cover: The joint SF GRID and LA BULLETIN prepares engineers for WESCON (Western Electronic Show and Convention), co-sponsored by WEMA (the Western Electronic Manufacturers Association).

Page 10: In Session 16, Bernie Widrow and Ted Hoff give a talk on "adaptive Switching Circuits".

Page 14: In Session 25, Jay Last of Fairchild (and one of Shockley's "traitorous eight") gives a talk on "Solid State Micrologic Elements" – what we today call ICs.

Page 16: Bernard Oliver of HP chairs a session on "Information Theory and Modulation Methods".

Page 26: Clarence Radius of CalPoly takes issue with the "Radio" in the IRE's name, saying we've outgrown this narrower field. He thinks "electronic engineering" is much broader, and more inclusive. He goes so far as to suggest deleting the term "electrical", since electronics can logically include this field. Maybe he's on to something; in a few years, the AIEE and the IRE decide to merge, to form the IEEE.

Page 37: A retrospective looks back at WESCON 1950. Known then as the "Sixth Annual IRE West Coast Convention and Pacific Electronic Exhibit", it was subsequently shortened to the name above. The technical program was introduced by Stanford's dean Fred Terman, later considered the "Father of Silicon Valley", who spoke on "West Coast electronics not only has a future, but also a long and significant past". For a profile of the VERY early days of electronics in the SF Bay Area, find my 2017 lecture to the Stanford Historical Society on YouTube: "The Origins of Silicon Valley: Why and How it Happened Here".

Bill Hewlett also served as a Session Chair at this 1950 event.

JOINT PUBLICATION LOS ANGELES AND SAN FRANCISCO SECTIONS OF THE I.R.E.

JULY 1960

grid-bulletin

SPONSORED BY SEVENTH REGION, IRE AND WESTERN ELECTRONICS MANUFACTURERS ASSOC.

LOS ANGELES, AUGUST 23-26

See *Gertsch* for any problem in precision AC or DC Voltage dividers

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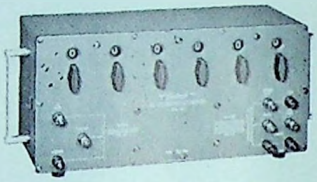
Sixteen models of these variable, tapped auto-transformers are stocked, differing in mechanical construction, type of switching, number of decades, degree of resolution, max. input voltage, etc. Models available, either case-or rack-mounted.



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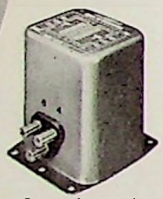
Combining precision RatioTrans with precise resistive dividers, these units offer the ultimate in accuracy (up to .0001%), for calibration and instrument standard labs. Available in 6 combinations of AC & DC sections.



ST-100

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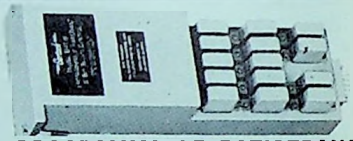
SHAFT-DRIVEN RATIOTRANS

—precision shaft-angle to AC voltage ratio transducers, with the ratio reading visible through a window in the case. Units are driven by ¼" shafts, and supplied in either 100-turn or 1000-turn models.



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—for automatic checkout equipment and other programmed devices. Gertsch units accept decimal, binary-coded decimal, or straight binary data arriving from punched tape or card readers. Units can be designed to customers applications.

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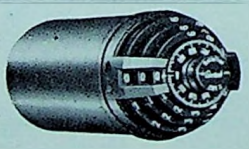

CRT-3

COAXIAL SWITCH RATIOTRANS

These small, lightweight instruments, accurate to 0.001%, are available in 2 types—one a 2½"-diameter unit qualified to MIL Specs... the other a 3½"-diameter unit, economically priced.

CRT models are available with up to 6-place resolution, and in a variety of decade arrangements. Gertsch also manufactures a complete line of coaxial-switched resistive dividers.

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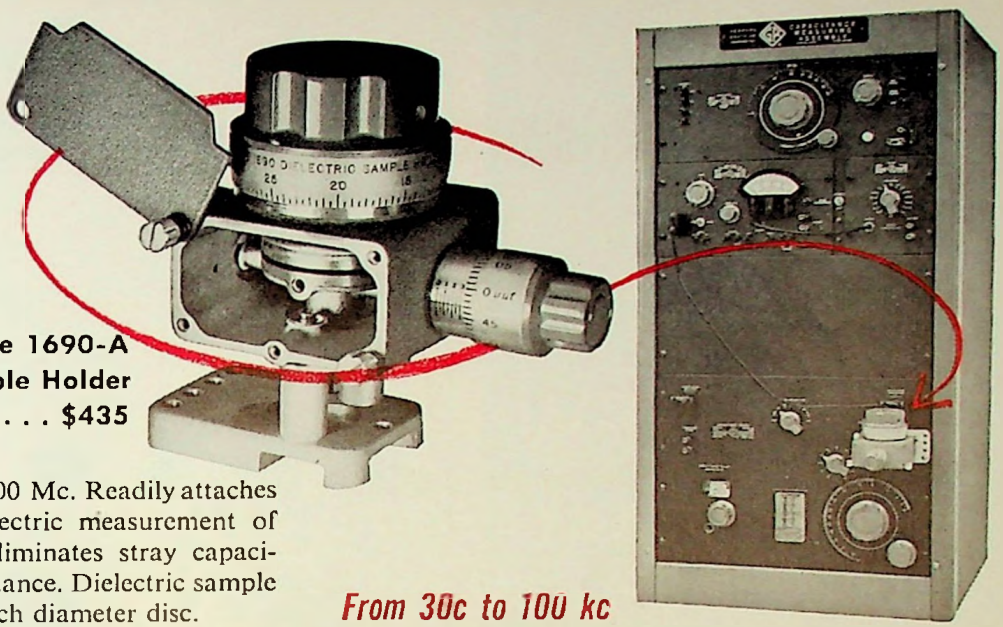
INSTRUMENTS FOR DIELECTRIC MEASUREMENTS



Type 1690-A
Dielectric Sample Holder
. . . $435

Useful to better than 100 Mc. Readily attaches to bridges for precise dielectric measurement of solid materials; virtually eliminates stray capacitance effects and lead impedance. Dielectric sample size is standard ASTM 2-inch diameter disc.

The Holder's electrodes are ground optically flat and are circular. One electrode is fixed, and the other is driven by a precision micrometer screw for accurate determination of electrode spacing. The drive automatically disengages when the electrodes come in contact with the specimen, thus providing the same contact pressure in all cases and preventing accidental damage. A micrometer-driven vernier capacitor with a range of 5 $\mu\mu f$ provides accurate increments of capacitance for measurements by ASTM resonant-circuit methods.

From 30c to 100 kc

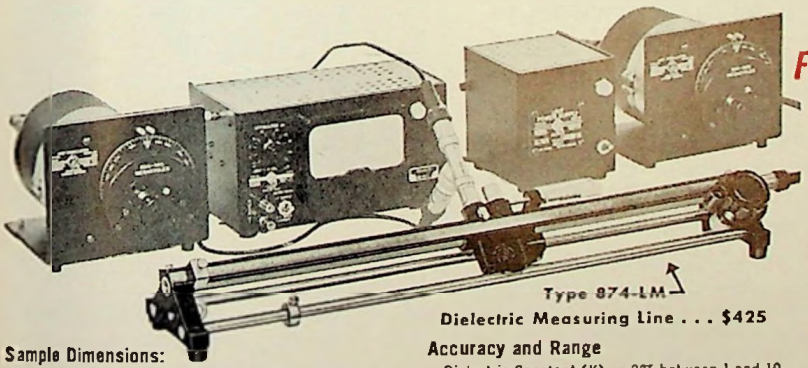
Type 1610-A2 Capacitance Measuring Assembly...$1875

A complete system for measuring capacitance from 100 $\mu\mu f$ to 1.15 μf at 1 kc; to 1150 $\mu\mu f$ at frequencies to 100 kc. Will measure capacitance as small as 0.1 $\mu\mu f$ using substitution methods. Accuracy, $\pm 0.1\%$ using direct method, $\pm 0.2\%$ for substitution method. Dissipation-factor range, 0.00002 to 0.56; accuracy, $\pm 2\%$. Assembly may also be used with liquid-dielectric cells.

At 1 Mc

Type 1610-AH Capacitance Measuring Assembly...$1035

Can be used from 0.1 to 5 Mc with external generators. Range: direct method, 100 to 1150 $\mu\mu f$; substitution method, 0.1 to 1050 $\mu\mu f$. Accuracy and D range same as 1610-A2.



Type 874-LM
Dielectric Measuring Line . . . $425

For Measurements From 200 to 5000 Mc

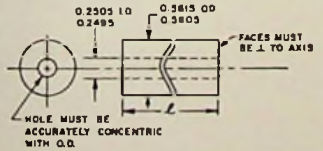
The Type 874-LM Dielectric Measuring Line . . .

An air-dielectric, coaxial line whose field is sampled by an electrostatic probe mounted on a movable carriage. Also shown is a driving oscillator (right), and a Type DNT Detector assembly that is made up of an oscillator, mixer-rectifier, and combination i-f amplifier and null detector (left).

Operation is simple . . .

A cylindrical dielectric specimen is fitted into the open end of the line. The frequency of the signal source driving the line is adjusted until a voltage minimum is detected with the probe about a centimeter away from the sample. Dielectric constant and dissipation factor are then quickly calculated from two simple algebraic expressions.

Sample Dimensions:
Length dependent upon K and frequency



Accuracy and Range

Dielectric Constant (K): $\pm 2\%$ between 1 and 10
Dissipation Factor (D) $\pm(5\% + 0.0001)$ between 0 and 0.05

Frequency Range:

Maximum · 5000 Mc or $\frac{9000}{\sqrt{K}}$ whichever is smaller

Minimum · $\frac{200}{\sqrt{K}}$ Mc

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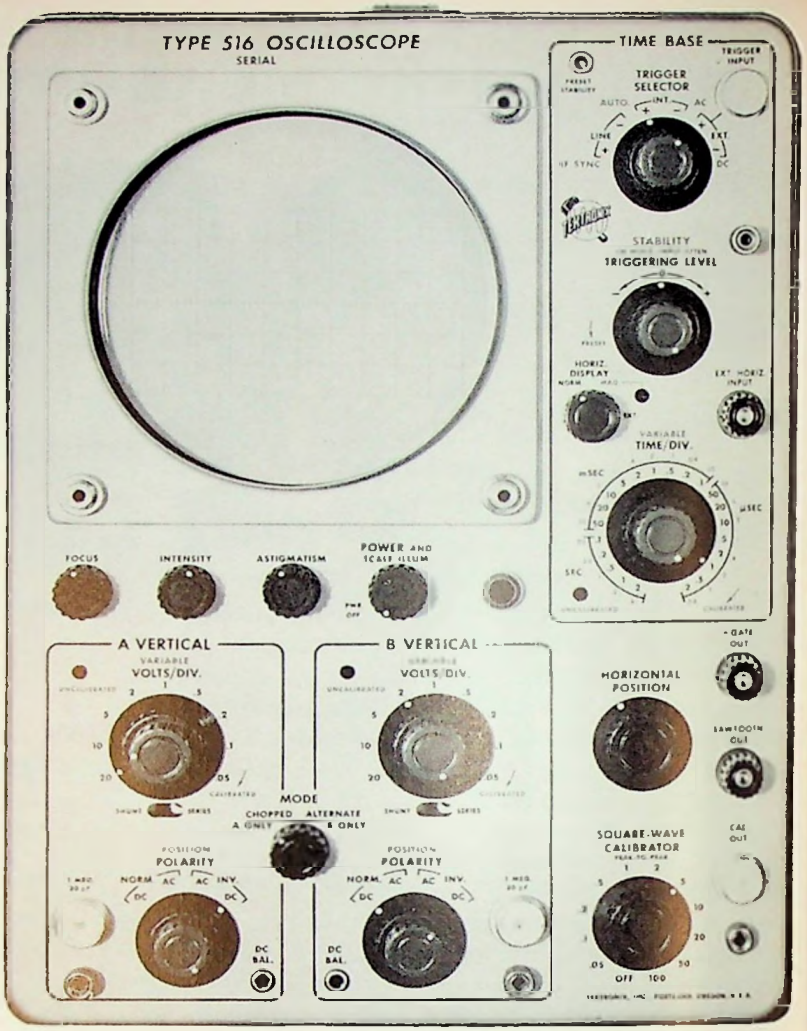
NEW
DUAL-TRACE
DC-to-15 MC OSCILLOSCOPE

Tektronix Type 516



The vertical-deflection system of this new Dual-Trace Oscilloscope has four operating modes: (1) Input channels switched on alternate sweeps—(2) Input channels switched at a free-running rate of about 150 kc—(3) Channel A used separately—(4) Channel B used separately. It is a completely-integrated high-quality laboratory oscilloscope with the additional advantages of small size, low weight, high reliability, and easy operation.

Your Tektronix Field Engineer will be happy to arrange a demonstration in your application. Call him for complete details.

Main Characteristics

Frequency Response
dc to 15 mc.

Transient Response
Risetime—23 nanoseconds.

Vertical Sensitivity
0.05 v/div to 20 v/div in 9 calibrated steps.
Continuously variable from 0.05 v/div to approximately 50 v/div uncalibrated.

4 Operating Modes
Channel A only,
Channel B only,
Chopped—electronic switching at about 150 kc—with switching transients blanked,
Alternate—electronic switching on alternate sweeps.

Sweep Range
0.2 μsec/div to 2 sec/div in 22 calibrated steps.
Continuously variable from 0.04 μsec/div to 6 sec/div uncalibrated.
5-X magnification.

Trigger System
Automatic or amplitude-level selection (preset or manually set).
Rising or falling slope.
Internal, external, or line frequency, ac or dc-coupled.
H.F. Sync to approximately 20 mc.

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SEE THE TYPE 516 AND OTHER NEW TEKTRONIX INSTRUMENTS AT WESCON, BOOTHS 817 AND 818

A
Combined Publication
of the Los Angeles and
San Francisco Sections, IRE.

Volume 5 No. 1
July 1960

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INDEX:

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grid-bulletin

Annually the 7th Region, IRE, together with the Western Electronic Manufacturers Association presents the Western Electronic Show and Convention. The Los Angeles and San Francisco Sections, representing the Region, produce the July and August GRID-BULLETINS so that IRE members may have early and continuing authoritative information on this important show. This year, as every year, each technical paper and exhibit is worthy of the reader's close attention, since WESCON is a yearly progress report on the industry as a whole, highlighting the West.

Hope you can be in Los Angeles, August 23-26, the magic dates, when the 1960 WESCON unfolds!

—The Editors

Burgess Dempster, left, and Victor Corey, right, respective chairmen of the Los Angeles and San Francisco Sections, talk with Dr. Ernst Weber, last year's IRE president at the 1959 WESCON.

Los Angeles Speaks . . .

A Word about WESCON

The Los Angeles IRE Section, as co-host, extends a cordial invitation to attend the 1960 WESCON.

As usual, you find many things improved and many new ideas being tried. Changes have been made in the technical program, the exhibits will be in the new Sports Arena with the entire area air conditioned (including the tent annex), and innovations are being introduced in other parts of the program.

The changes are all to make the entire Show and Convention better.

The emphasis is on quality. We hope and expect that all will find more of interest, more value in the programs and contacts, and more enjoyment.

Welcome to WESCON.

BURGESS DEMPSTER
Chairman, 1959-1960
Los Angeles Section, IRE

San Francisco Speaks . . .

A Western Welcome

It is a distinct privilege to extend to all our 1960 WESCON visitors a cordial Western welcome on behalf of the San Francisco Section of the Institute of Radio Engineers and the San Francisco Council of WEMA. We take pleasure in bringing you a new and superlative technical program and an immense industrial exposition of the electronics industry, wrought through a vast and protracted collaboration with our sister organizations in the host city of Los Angeles.

As typical of WESCON as of the electronics industry itself, dynamic evidences of growth and change can be seen everywhere. The largest available facility, the Sports Arena, must be supplemented with a tent to accommodate the 900 booths of 800 exhibitors, while hundreds of others cannot be accommodated at all. Only a fraction of the technical

(Continued on Page 45)

1960 WESCON Introduces Soaring Sixties in Electronics

With a new approach to its technical presentations, a new, modern showplace for its exhibits, and "firsts" in most other activities, WESCON for 1960 promises to set new heights in show and convention quality this summer.

The big event, traditional highlight of the electronics industry year in the West, opens its four-day run in the Los Angeles Memorial Sports Arena August 23.

Statistically, the size and scope of WESCON '60 are impressive: there will be 987 exhibit booths, 44 technical sessions involving more than 210 authors and panelists, and an attendance of 35,000 or more persons. The Distributor-Representative Conference, a forerunner to WESCON on August 22, will stage an all-day sales talk session for upwards of 600 industry men at the Ambassador Hotel.

The WESCON work, carried out by volunteer industry leaders for more than six months, has involved more than 200 committeemen and women, almost equally divided between the convention and show halves of WESCON. They have worked under Show Director Donald C. Duncan and Convention Director Bruce S. Angwin.

The WESCON board, a "working board" throughout the year, includes Walter E. Peterson, chairman; Hugh P. Moore, chairman of this year's executive committee; Angwin, Duncan, and four members representing the Bay Area electronics complex — Albert J. Morris, O. H. Brown, John V. N. Granger, and Calvin K. Townsend.

Technical Program

Chairman Richard G. Leitner and his technical program committee have readied a program significant in its variety of format and emphasis.

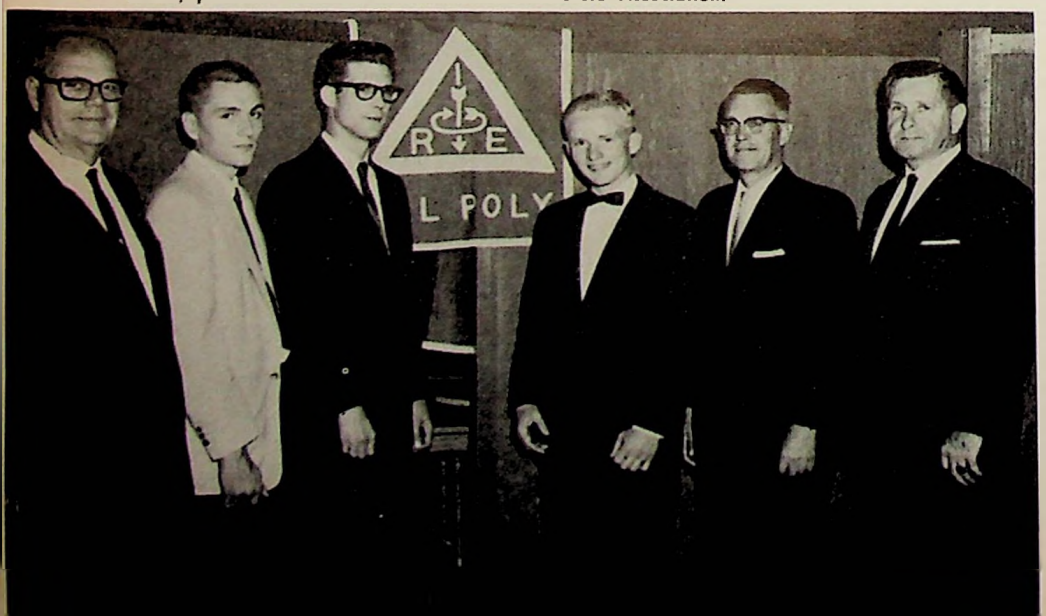
In contrast to many program-planning procedures, the committee set the session formats only after it had received and evaluated all technical papers proposed for WESCON. The result has been a matching of sessions to the quality of material contributed. Thus, session formats include panel discussions, debates, papers-plus-panels, tutorial papers, related papers, and workshops.

Where exceptional material on any given subject became available, extra sessions have been planned on that subject. "Man Machine Systems," for example, will be studied in four sessions and four workshops. In six sessions, authors or panelists were "invited" to submit papers in their special fields.

A number of sessions were specifically planned to present differing points of view. Typical of this is a session on "Information Theory" and Modulation Systems" to be

(Continued on Page 8)

WEMA SCHOLARSHIPS were awarded to Cal Poly, San Luis Obispo, May 31. From left. College president Julian McPhee, Robert Carlson, freshman, Roger Brier, sophomore, Norman Murray, Senior, SLO High School, Dr. Harry Wolf, Scholarship chairman, Engrg. Dept., and Spencer H. Bellue, president Western Electronic Manufacturers Association.



WESCON TECHNICAL PROGRAM

Time Schedule in August GRID-BULLETIN

ROOM A / Session No. 1
Type of Session: Contributed Papers
(Beginning 10:00 a.m.)
Title of Session: SYSTEMS AND MAINTAINABILITY
Chairman: Irvin R. Whiteman, Project Director, General Analysis Corp., Los Angeles, Calif.
Speakers: J. J. Brown, J. H. Chin, G. W. Jacob, Sperry Gyroscope Co., Great Neck, L.I.: A SYSTEMATIC APPROACH TO COMPLEX ELECTRONIC EQUIPMENT MAINTENANCE; E. S. Winlund, General Electric Co., Phoenix, Ariz.: ECONOMY MODELS FOR SYSTEM DESIGN ENGINEERS; H. Adise, Computer Instruments Corp., Hempstead, L.I., N.Y.: PRECISION FILM POTENTIOMETERS; W. C. Kraft, Sandia Corp., Albuquerque, N.M.: ENGINEERING CONTRIBUTION TO PRODUCT QUALITY

ROOM B / Session No. 2
Type of Session: Contributed Papers
(Beginning 10:00 a.m.)
Title of Session: PULSE-HANDLING TECHNIQUES
Chairman: Nicholas Begovich, Hughes Aircraft Co., Fullerton, Calif.
Speakers: Allen Norris, Varian Associates, Palo Alto, Calif.: A THEORY OF ENHANCEMENT FILTERS; Oscar A. Huettner, International Telephone and Telegraph Laboratories, Nutley, N.J.: PULSED RF STORAGE IN LONG DELAY, BROADBAND CLOSED LOOP SYSTEMS; L. T. Rhodes, Naval Research Laboratories, Washington, D. C.: THE PROBLEMS AND SOLUTIONS IN THE NAVY'S PROGRAM FOR STANDARDIZATION OF VIDEO PROCESSING AND DISTRIBUTION; Robert E. Segal, Packard-Bell Electronics Corp., West Los Angeles, Calif.: A SOLID-STATE VIDEO PROCESSOR WITH PULSE-FOR-PULSE AGC

ROOM C / Session No. 3
Type of Session: Contributed Papers
Title of Session: COMMUNICATIONS: NEW SOLUTIONS TO SOME OLD PROBLEMS
Chairman: Carroll Lindholm, Rand Corporation, Santa Monica, Calif.
Speakers: A. Machi, J. Hoffman, System Development Corp., Lodi, N.J.: EFFECT OF LINK ELIMINATION IN DATA TRANSMISSION SYSTEMS; Paul A. Lux, Sandia Corp., Livermore, Calif.: H. M. Swarm and David D. McNelis, Univ. of Washington, Seattle, Washington: OPTIMUM ANTENNA PATTERN FOR A SIGNAL BURST COMMUNICATION SYSTEM; Elie J. Baghdady, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, Mass.: LINEAR CANCELLATION TECHNIQUE FOR SUPPRESSING IMPULSE NOISE

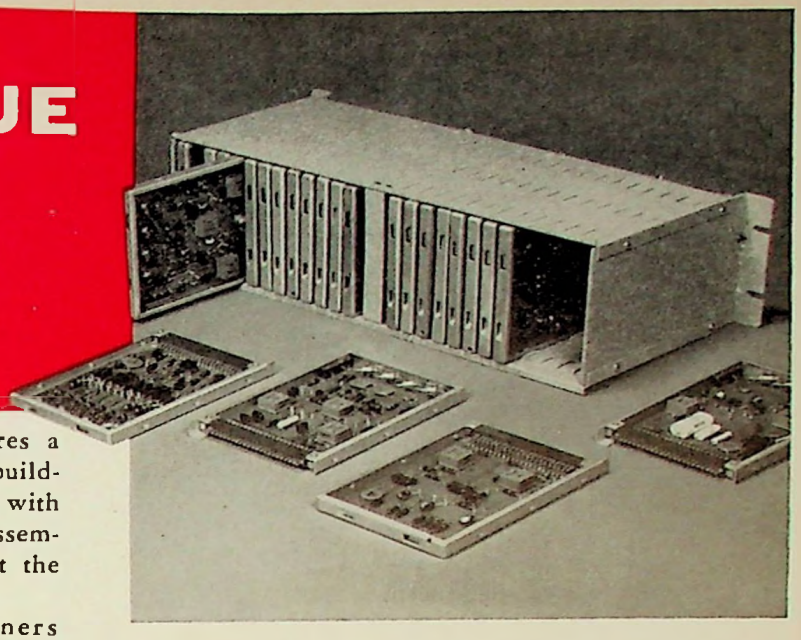
ROOM D / Session No. 4
Type of Session: Symposium
Title of Session: MANAGEMENT OF MANNED MACHINE SYSTEMS
Chairman: Arnold Small, Hughes Aircraft Company, Fullerton, Calif.
Speakers: Thomas Eason, Stromberg-Carlson, Co., Rochester, N.Y.,: A SYSTEMS MANAGEMENT APPRAISAL OF THE FUNCTIONS OF HUMAN ENGINEERING; Stanley Deutsch, Douglas Aircraft Co., Inc., Santa Monica, Calif.: HUMAN FACTORS CONTRIBUTION TO MANAGEMENT CONTROL PROCEDURES.

ROOM E / Session No. 5
Type of Session: Contributed Papers
Title of Session: SEMICONDUCTOR DEVICES AND TUBES
Chairman: Norman J. Golden, Hoffman Semiconductors, Inc., El Monte, Calif.
Speakers: I. T. Saldi, General Electric Co., Schenectady, N.Y.: POWER OUTPUT AND EFFICIENCY OF THERMIONIC CONVERTERS; G. Leuttgenau, M. V. Duffin, Pacific Semiconductors, Inc., Culver City, Calif.: HIGH POWER AT 1,000 MC USING SEMICONDUCTOR DEVICES; A. K. Kamal, K. E. Lytal, H. W. Pass, Purdue University, Lafayette, Indiana: EQUIVALENT CIRCUIT OF A PARAMETRIC DIODE AT MICROWAVES; J. S. Schaffner, Delco Radio Division, General Motors Corp., Kokomo, Indiana: QUALITY ASSURANCE PROCEDURES FOR POWER TRANSISTORS

ROOM A / Session No. 6
Type of Session: Panel Discussion

(Continued on Page 8)

New! SPRAGUE LOGILINE* CIRCUITRY for digital system design



Sprague's latest line, the LOGILINE, features a series of 5 mc/s transistor switching circuits in building block form. Completely interchangeable with comparable units, these packaged component assemblies have gained wide acceptance throughout the digital industry.

LOGILINE offers designers either the flexibility of conventional wiring board construction for standard equipment assembly, or the versatility of encapsulated packages for miniaturized equipment.

The complete series of LOGILINE modules includes: Inverter, Diode Gate, Flip-Flop, Dual Flip-Flop, Delay, 3-Digit Shift Register, Clock, Pulse Amplifier, Pulse Generator, Indicator Driver.

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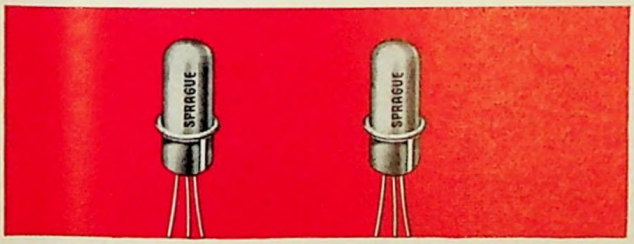
Super high-speed switching TRANSISTORS available at sensible prices!



Sprague's Type 2N501 and 2N501A Germanium Micro-Alloy Diffused-Base Transistors are *priced below other units* with comparable electrical characteristics. Expanded production facilities permit *shipment of quantity orders on short notice.* And because these transistors exhibit the *fastest switching time* in commercial production today, they may provide solutions to some of your latest circuit design problems.

Storage and junction temperatures for these transistors is 85 C for Type 2N501 and 100 C for Type 2N501A.

Subminiature metal-clad HYREL® Q CAPACITORS for Highest Reliabity

Sprague's Type 195P Capacitors are the most reliable subminiatures possible in the present state of the art. In every phase of their design, testing, and manufacture, the primary consideration is *optimum reliability.* Sprague can substantiate its claims with the most extensive test data available in the entire electronic industry.

Intended for military electronics, electronic computers, and complex equipment in which extreme system reliability is vitally important, Hyrel Q Capacitors are subjected to lot-by-lot environmental tests, giving each customer complete assurance of reliability.

Don't forget to visit Sprague Booths 445 and 446 at the WESCON Show, Los Angeles, August 23-26, 1960

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CAPACITORS • RESISTORS • MAGNETIC COMPONENTS • TRANSISTORS • INTERFERENCE FILTERS • PULSE NETWORKS
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WESCON Keynote (Cont. from Page 1

moderated by Dr. Bernard M. Oliver, which will present the viewpoints of eight different authorities in this field.

The "business side" of industry technical activities will receive attention, too, in a session on engineering proposals for government and industry, and engineers will also hear from financial, marketing and patent law authorities on some approaches to the business management of technical programs.

Sessions will run five-at-a-time each morning and afternoon during WESCON, with four unusual "workshop" sessions to be scheduled in addition.

With plans for each of WESCON's multiple activities now finalized, conventioners will be presented a program that reflects the interests of the many segments of a complex industry.

Field Trips

Eight field trips to 12 technically interesting Southland locations have been planned for WESCON week by a committee headed by Arthur N. Curtiss, chairman, and Gene Knight, vice chairman.

In a new approach aimed at making each trip more valuable, the committee has arranged for briefing sessions en route to each location, as well as the advance distribution of descriptive literature to trip-goers.

Space age research and develop-

(Continued on Page 12)

Dr. Allen M. Peterson, 1959 Seventh Region Electronic Achievement Award winner, is congratulated by Glenn A. Fowler, then Region Director.

Technical Program (Cont. from Page 1

Type of Session: WHAT ARE THE COMMUNICATION VALUES OF THE TECHNICAL SYMPOSIUM

Chairman and Moderator: L. McConnell, System Development Corp., Santa Monica, Calif.

Panelists: Irving L. Fong, Remington Rand Corp., UNIVAC Div., St. Paul, Minn.; *Subject:* THE SPEAKER; E. E. Hagenmann, Space Technology Laboratories, Los Angeles, Calif.; *Subject:* THE WRITER; Neil Horgan, The RAND Corp., Santa Monica, Calif.; *Subject:* THE EDITOR; Walker G. Stone, John Wiley & Sons, Inc., New York, N.Y.; *Subject:* THE PUBLISHER

ROOM B / Session No. 7

Type of Session: Contributed Papers

Title of Session: VARACTORS AND TUNNEL DIODE APPLICATIONS

Chairman: George C. Messenger, Hughes Semiconductor Div., Newport Beach, Calif.

Speakers: P. M. Fitzgerald, T. H. Lee, M. S. May, E. J. Powers and J. J. Younger, Lockheed Aircraft Corp., Missile Systems Div., Sunnyvale, Calif.: A NON-LINEAR CAPACITOR HARMONIC GENERATOR SUITABLE FOR SPACE VEHICLE APPLICATIONS; Alexander Szerlip, Packard-Bell Electronic Corp., West Los Angeles, Calif.: PARAMETRIC RADIO FREQUENCY AMPLIFIER; A. K. Kamal, A. J. Holub, Purdue Univ., Lafayette, Ind.: GAIN AND BANDWIDTH INCONSISTENCIES IN LOW FREQUENCY REACTANCE UP-CONVERTOR PARAMETRIC AMPLIFIERS; Gerald Schaffner, Semiconductor Products Div. Motorola, Inc., Phoenix, Ariz.: A COMPACT TUNNEL DIODE AMPLIFIER FOR ULTRA HIGH FREQUENCIES; C. H. Alford, Lockheed Aircraft Corp., Missile Systems Div., Sunnyvale, Calif.: ANALYSIS AND DESIGN OF THE TWIN-TUNNEL-

ROOM C / Session No. 8

Type of Session: Contributed Papers

Title of Session: INSTRUMENTATION

Chairman: Alvin Kaufman, Litton Industries, Beverly Hills, Calif.

Speakers: T. L. Davis and R. H. Doherty, U. S. Dept. of Commerce, National Bureau of Standards, Boulder Colo.: WIDELY SEPARATED CLOCKS WITH MICROSECOND SYNCHRONIZATION AND INDEPENDENT DISTRIBUTION SYSTEMS; R. W. Kearns, Wayne State University, Detroit, Mich.; THE SYNTHESIS OF INSTRUMENT COMPENSATING NETWORKS; David Rice, Republic Aviation Corp., Farmingdale, L.I., N.Y.: AN AUTOMATIC SERVOMECHANISM RESPONSE PLOTTER G. T. Kemp, Texas Research Associates Corp., Austin, Texas: TOUCH DETECTOR; Abner Updike, Ampex Data Products Co., Redwood City, Calif.: DETERMINATION OF INSTANTANEOUS SPEED ERROR DATA

ROOM D / Session No. 9

Type of Session: Tutorial Papers with Panel

Title of Session: CIRCUIT THEORY

Chairman: Louis Weinberg, Hughes Research Laboratories, Malibu, Calif.

Panelists: Isaac M. Horowitz, Hughes Research Laboratories, Malibu, Calif.; J. R. Burnett, Space Technology Laboratories, Los Angeles, Calif.

Speakers: Kan Chen, Westinghouse Electric Corp., Pittsburgh, Pa.: ANALYSIS AND DESIGN OF FEEDBACK SYSTEMS WITH GAIN AND TIME CONSTANT VARIATIONS; S. L. Hakimi and J. B. Cruz, University of Illinois, Urbana, Ill.: MEASURES OF SENSITIVITY FOR LINEAR SYSTEMS WITH LARGE MULTIPLE PARAMETER VARIATIONS; L. E. Franks and I. W. Sandberg, Bell Telephone Laboratories, Inc., Murray Hill, N. J.: A SAMPLED DATA TECHNIQUE FOR REALIZING NETWORK TRANSFER FUNCTIONS; T. R. O'Meara, Hughes Research Laboratories, Malibu, Calif.: DELAY DISTORTION CORRECTION FOR NETWORKS AND FILTERS

ROOM E / Session No. 10

Type of Session: Contributed Papers

Title of Session: SEMICONDUCTOR DEVICES

Chairman: T. W. Griswold, Continental Device Corp., Hawthorne, Calif.

Speakers: V. H. Grinich and David Hilbiber, Fairchild Semiconductor Corp., Mountain View, Calif.: A NEW SEMICONDUCTOR MEMORY ELEMENT WITH NON-DESTRUCTIVE READOUT AND ELECTROSTATIC STORAGE; H. Jacobs, F. A. Brand, J. Meindl and M. Benanti, US Army Signal Research & Development Laboratories, Ft. Monmouth, N.J.; J. Benicewicz, Monmouth College, W. Long Branch, N.J.: SOME NOVEL ASPECTS OF MICROWAVE REFLECTIONS IN SEMICONDUCTORS; E. H. Van Lieter and D. Navon, Transistor Electronic Corp., Wakefield, Mass.: HIGH SPEED ON OFF SWITCHES; E. A. Kaenel, Bell Telephone Labs. Inc., Murray Hill, N.J.: NOVEL ADDER-SUBTRACTOR CIRCUIT UTILIZING TUNNEL DIODES; V. L. Roach, Pacific Semiconductors, Inc., Culver City, Calif.: TRANSISTOR SCALING THEORY

ROOM A / Session No. 11

Type of Session: Contributed Papers

Title of Session: COMPUTERS – GENERAL

Chairman: L. J. Craig, THE RAND Corp., Santa Monica, Calif.

Speakers: L. T. Jones and P. Margolin, Westinghouse Electric Corp., Baltimore, Md.: DIGITAL CONTROL TECHNIQUES FOR SPACE; Harold A. Heil, Thompson Ramo Wooldridge, Inc., Canoga Park, Calif.: THE POLYMORPHIC PRINCIPLE IN DATA PROCESSING; Paul Baran and Gerald Estrin, University of California, Los Angeles, Calif.: AN AIDED ADAPTIVE CHARACTER READER FOR MACHINE TRANSLATION OF LANGUAGES; Emory Cohl, Librascope Div., General Precision, Inc., Glendale, Calif.: A MULTI-ADDRESSABLE RANDOM ACCESS FILE SYSTEM

ROOM E / Session No. 12

Type of Session: Papers and Panel Discussion

Title of Session: STEREO MULTIPLEX BROADCASTING

Chairman: I. J. Kaar, Hoffman Electronics Corp., Los Angeles, Calif.

Panelists: Carl Eilers, Zenith Radio Corp., Chicago, Ill.; William H. Beaubien, General Electric Co., Utica, N.Y.; Murray G. Crosby, Crosby-Teletronics Corp., Syosset, N.Y.; Harold Parker, Calbest Engineering and Electronics, Los Angeles, Calif.; William Halstead, Multiplex Development Corp., New York, N.Y.

Speakers: R. J. Farber, Hazeltine Research Corp., Plainview, N.Y.: REQUIREMENTS FOR FM STEREOPHONIC RADIO TRANSMISSION; A. Prose Walker, National Association of Broadcasters, Washington, D.C.: PROGRESS OF FIELD TESTS FOR FM STEREOPHONIC BROADCAST SYSTEMS

ROOM C / Session No. 13

Type of Session: Contributed Papers

Title of Session: MICROWAVE THEORY AND TECHNIQUES – I: PASSIVE ELEMENTS

Chairman: Harold Saltzman, Kearfott Co., Inc., Van Nuys, Calif.

Speakers: R. M. Bevensee, Varian Associates, Palo Alto, Calif.: MISCONCEPTIONS ABOUT EQUIVALENT CIRCUITS FOR PERIODIC MICROWAVE STRUCTURES; L. Levey and L. M. Silber, Polytechnic Institute of Brooklyn, Brooklyn, N.Y.: A FAST SWITCHING X-BAND CIRCULATOR UTILIZING FERRITE TOROIDS; K. L. Kotzebue, Watkins-Johnson Co., Palo Alto, Calif.: BROADBAND ELECTRONICALLY-TUNED MICROWAVE FILTERS; A. P. King, Bell Telephone Laboratories, Red Bank, N.J.: THE OBSERVED 50-90 KMC ATTENUATION OF TWO INCH IMPROVED WAVEGUIDE; D. Alstadter and N. A. Dawson, Melpar, Inc., Falls Church, Va.: A NON-CONTRACTING, BROADBAND ROTARY JOINT, AND FOUR-WAY SWITCH

ROOM D / Session No. 14

Type of Session: Symposium

Title of Session: ANALYSIS OF MANNED MACHINE SYSTEMS

Chairman: G. E. Rabideau, Norair Division of Northrop Corporation, Hawthorne, Calif.

Speakers: D. T. McRuer and I. L. Ashkenas, Systems Technology, Inc., Inglewood, Calif.: THE VOCAL ADAPTIVE CONTROLLER — HUMAN PILOT DYNAMICS AND OPINION; A. Sweetland, The RAND Corp., Santa Monica, Calif.: MODEL FOR ANALYSIS OF HUMAN DECISION MAKING; Ralph W. Queal, Boeing Airplane Co., Seattle, Washington: METHODOLOGY OF MANNED MACHINE SYSTEM ANALYSIS; T. E. Leonard, Aeronutronic Systems, Inc., Newport Beach, Calif.: OPTIMIZING LINEAR DYNAMICS FOR HUMAN OPERATED SYSTEMS BY MINIMIZING THE MEAN SQUARE TRACKING ERROR

(Continued on Page 10)

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Technical Program (Cont.) from Page 8

ROOM E / Session No. 15

Type of Session: Tutorial Papers

Title of Session: MICROWAVE TUBES

Chairman: W. H. Christoffers, Microwave Tube Div., Hughes Aircraft Corp., Los Angeles, Calif.

Speakers: E. W. Kinaman and G. E. St. John, Watkins-Johnson Co., Palo Alto, Calif.: AN OCTAVE-BANDWIDTH ULTRA LOW NOISE TRAVELING WAVE AMPLIFIER; D. V. Geppert, Sylvania Electronic Systems Mountain View, Calif.: VERY HIGH CONVERGENCE ELECTRON GUNS; D. C. Forster, Hughes Research Laboratories, Culver City, Calif.: COOLING OF THE SLOW SPACE-CHARGE WAVE OF AN ELECTRON BEAM WITH APPLICATION TO THE TRAVELING-WAVE TUBE; S. J. Tetenbaum, R. R. Moats and D. Campbell, Sylvania Electronic Systems, Mountain View, Calif.: ARC DISCHARGE, MICROWAVE SWITCH TUBE; C. C. Johnson, Hughes Research Laboratories, Culver City, Calif.: A PERIODICALLY FOCUSED BACKWARD-WAVE OSCILLATOR; R. G. Rockwell, Varian Associates, Palo Alto, Calif.: A FOUR-CAVITY, ELECTROSTATICALLY FOCUSED, KU-BAND KLYSTRON AMPLIFIER

ROOM A / Session No. 16

Type of Session: Contributed Papers

Title of Session: COMPUTER CIRCUITS AND DEVICES

Chairman: George Eisler, Eisler Associates, Los Angeles, Calif.

Speakers: S. B. Yochelson, Goodyear Aircraft Corp., Akron, Ohio: DIODELESS MAGNETIC CORE LOGIC; Alvin Lemack and John E. Thomas, Sylvania Electronic Systems, Needham, Mass.: A FRACTIONAL MICROSECOND CYCLE TIME MEMORY USING LOW COERCIVE FERRITE CORES; B. Widrow and M. E. Hoff, Stanford University, Palo Alto, Calif.: ADAPTIVE SWITCHING CIRCUITS; Charles R. Cook, Jr., Texas Instruments, Inc., Dallas, Texas; 25-MC CLOCK-RATE COMPUTER CIRCUITS FOR OPERATION FROM −20°C to +100°C; T. P. Bothwell, J. DeClue, H. H. Hill and J. R. Longland, Computer Control Co., Framingham, Mass.: A DYNAMIC LOGIC TECHNIQUE FOR SIXTEEN MEGACYCLE CLOCK RATE

ROOM B / Session No. 17

Type of Session: Tutorial

Title of Session: MAGNETIC DATA RECORDING

Chairman: Warren R. Isom, Radio Corporation of America, Camden, N.J.

Speakers: A. M. Wilson, Precision Instrument Co., San Carlos, Calif.: EXTENDING THE BANDWIDTH OF A CONVENTIONAL INSTRUMENTATION RECORDING SYSTEM; M. E. Anderson and J. A. Granath, Armour Research Foundation, Chicago, Ill.: A WIDEBAND MAGNETIC RECORDING SYSTEM; W. T. Frost, Ampex, Data Products Co., Redwood City, Calif.: THE SENSITIVITY OF REPRODUCING HEADS IN HIGH-FREQUENCY MAGNETIC RECORDING SYSTEMS; J. T. Mullin, Mincom Div., Minnesota Mining and Mfg. Co., Los Angeles, Calif.: MECHANICAL DESIGN OF THE CM-100 INSTRUMENTATION TAPE RECORDER; G. Nels Johnson, Mincom Div., Minnesota Mining & Mfg. Co., Los Angeles, Calif.: ELECTRICAL DESIGN AND PERFORMANCE OF THE CM-100 INSTRUMENTATION TAPE RECORDER; George Work and David Lewis, Leach Corp., Compton, Calif.: COMPARISON OF WIDEBAND FM AND CARRIER ERASE TECHNIQUES FOR RECORDING DATA FROM DC TO 10 KC

ROOM C / Session No. 18

Type of Session: Contributed Papers

Title of Session: MICROWAVE THEORY AND TECHNIQUES — II: ACTIVE ELEMENTS

Chairman: Richard Jamison, Hughes Aircraft Co., Culver City, Calif.

Speakers: H. R. Senf, Hughes Research Laboratories, Culver City, Calif.: MASERS FOR SYSTEM APPLICATIONS; C. G. Shafer, Raytheon Co., Waltham, Mass.: DESIGN AND OPERATION OF AN S-BAND TRAVELING-WAVE DIODE PARAMETRIC AMPLIFIER; C. V. Bell, Walla Walla College, Walla Walla, Washington; and Glen Wade, Raytheon Co., Burlington, Mass.: THE NOISE FIGURE OF ITERATIVE TRAVELING-WAVE PARAMETRIC AMPLIFIERS; R. V. Garver, Diamond Ordnance Fuze Laboratories, Washington, D.C.: THEORY OF TEM DIODE SWITCHING; D. E. Nelson and F. Sterzer, Radio Corporation of America, Princton, N.J.: TUNNEL DIODE MICROWAVE OSCILLATORS WITH MILLIWATT POWER OUTPUTS

(Continued on Page 12)

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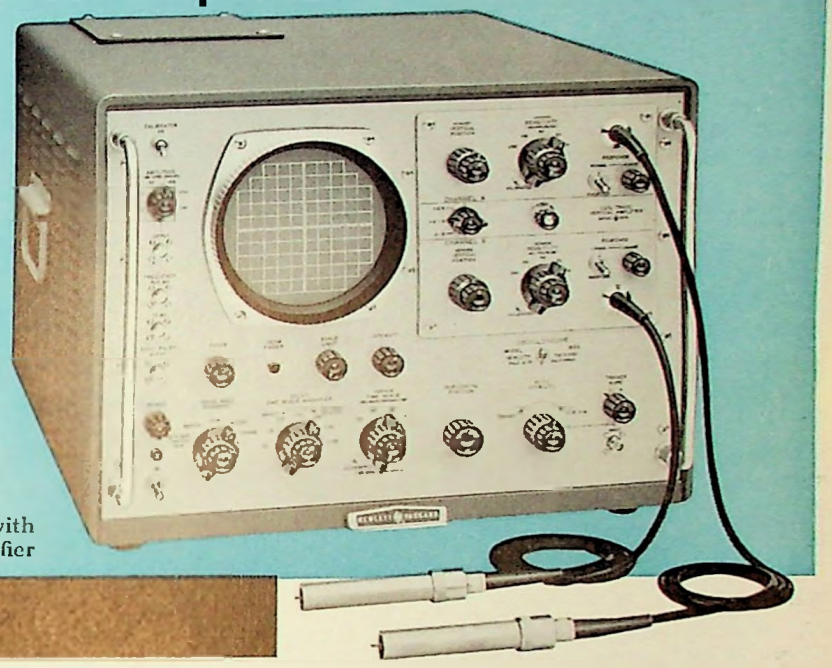

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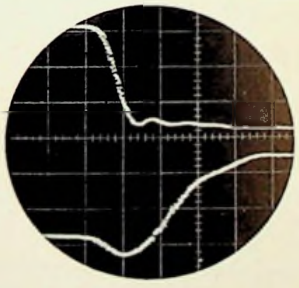

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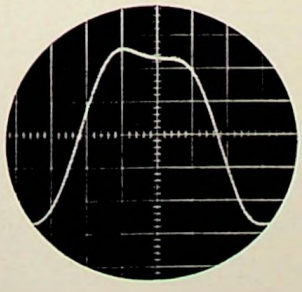

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WESCON Roundup (Cont.) from Page 8

ment at Caltech, Jet Propulsion Laboratories and Space Technology Labs, propulsion development and testing at Rocketdyne's Santa Susana facility, latest production methods in consumer electronic products, and newest developments in computer technology and semiconductor devices will all be covered in daily trips.

As a pleasant sidelight, trips to the torrid West San Fernando Valley will be made in air-conditioned busses.

Future Engineers

The fourth Annual Future Engineers Show of WESCON will present the experiments of about 33 outstanding science students from throughout the West.

Their show, actually a "junior" WESCON within the framework of the bigger event, has proved one of the most popular of the sidebar activities of WESCON. Student participants and their instructors are the guests of WESCON in Los Angeles and each receives a defense bond for his part in the show. Winning students receive scholarship prizes totalling $2500 and ranging from $200 for fifth place to $1000 for first place.

In addition to the exhibits — which range from hand-made analog and digital computers to displays of tunnel diode research — the Future Engineers program includes field trips (to STL and Disneyland), an award luncheon, and a session in which youngsters will deliver technical papers on their work. A jury of professional engineers will judge the works.

Cocktail Party

When engineers and management take a breather from the nearly 1000 exhibits of WESCON and the high-level technical discussions, they will relax in the ballroom of the Ambassador Hotel and WESCON's traditional all-industry cocktail party.

The affair, always a sellout, is noted as a meeting-place for electronics men and their ladies, where old acquaintances can be renewed.

Actually, the party will be held in three convention-size rooms — the ballroom and the adjacent Boulevard and Sunset rooms. All three are required for an expected attendance that may exceed 5000 persons.

Chairman William J. Miller of Burton Manufacturing has set a "wild, wild western" theme for the party, and he and his committee will be in frontier costume to add color. Decorations will carry the theme as well, and strolling musicians will entertain the guests.

Distributor-Rep Conference

On August 22, a day ahead of WESCON's opening, the men who move the products to the marketplace and thence to customers will meet at the Ambassador Hotel.

About 600 factory sales executives, distributors, and representatives will gather for an all-day, shirtsleeves business session. The

(Continued on Page 20)

The 1960 WESCON will resemble this 1959 shot of WESCON at the Cow Palace, San Francisco. Exhibits will be under same roof as technical program, with Arena seats converted into temporary auditoriums.

Technical Program (Cont.) from Page 10

ROOM D / Session No. 19
Type of Session: Invited Speakers
Title of Session: WORKING WITH ENGINEERS
Chairman: To be announced.
Speakers: Glen P. Beiging, Packard-Bell Electronic Corp., West Los Angeles, Calif.: MARKETING. W. R. Lane, North American Aviation, Los Angeles, Calif.: PATENT LAW; R. T. Silberman, Electronics Capital Corp., San Diego, Calif.: ACCOUNTING AND FINANCE

ROOM E / Session No. 20
Type of Session: Contributed Papers
Title of Session: VEHICULAR COMMUNICATIONS — I: RADIATING SYSTEMS
Chairman: D. L. MacDonald, Pacific Telephone & Telegraph, Los Angeles, Calif.
Speakers: Helmut Brueckmann, US Army Signal Research and Development Laboratory, Ft. Monmouth, N.J.: THEORY AND PERFORMANCE OF VEHICULAR CENTER-FED WHIP ANTENNA; R. F. H. Yang and H. H. Hansen, Andrew Corp., Chicago, Ill.: A BROAD-BAND 160 MEGACYCLE COLINEAR ARRAY; R. F. H. Yang and F. R. Willis, Andrew Corp., Chicago, Ill.: EFFECTS OF TOWER AND GUYS ON PERFORMANCE OF SIDE-MOUNTED VERTICAL ANTENNAS; J. Arbuthnott, A. L. McKean and S. Trill, Phelps Dodge Copper Products Corp., New York, N.Y.: FOAMFLEX COAXIAL CABLE FOR COMMUNICATIONS

ROOM A / Session No. 21
Type of Session: Panel Discussion Following Presentation of Paper
Title of Session: COMPONENT AND SYSTEMS RELIABILITY
Chairman: Walter R. Kuzmin, Packard-Bell Electronics Corp., Los Angeles, Calif.
Panelists: S. Gollin, Walter Darwin Teague Associates, New York, N.Y.; S. Kukawka, Bourne Laboratory, Inc., Riverside, Calif.: A. Wood, Relay Div., Leach Corp., Los Angeles, Calif.: Carlyl C. Elrod, The Ralph M. Parsons Co., Pasadena, Calif.
Speaker: Irving Doshay, Aerojet General Corp., Azusa, Calif.: USING FAILURE RATE DATA FOR COMPONENT PART DERATING

ROOM B / Session No. 22
Type of Session: Related Papers
Title of Session: AIR TRAFFIC CONTROL (ATC) — SESSION I
Chairman: Vernon Weihe, General Precision, Inc., Washington, D. C.
Speakers: Ralph E. Link, Bureau of Research and Development, Federal Aviation Agency, Washington, D.C.: OPERATIONAL CONSIDERATIONS IN ATC DESIGN; Capt. J. D. Smith, Air Line Pilots Association, New York, N.Y.: AN AIRLINE PILOT LOOKS AT ATC; Victor H. Kayne, Aircraft Owners and Pilots Association, Washington, D.C.: ATC FROM THE AIRCRAFT OWNERS' VIEWPOINT; J. R. Dettman, Air Transport Association of America, Los Angeles, Calif.: THE AIRLINES AND AIR TRAFFIC CONTROL

ROOM C / Session No. 23
Type of Session: Contributed Papers
Title of Session: ANTENNAS. SESSION I
Chairman: Louis L. Bailin, Hughes Aircraft Co., Culver City, Calif.
Speakers: C. C. Phillips, Melpar, Inc., Falls Church, Va.: A NEW APPROACH TO ANTENNA BEAM-SHAPING — THE "COKE-BOTTLE" ANTENNA; Paul Shelton, Aero Geo Astro Corp., Alexandria, Va.: APPLICATION OF FREQUENCY SCAN TO CIRCULAR ARRAYS; Henry Pfizenmayer and J. A. Kuecken, Avco Corp., Cincinnati, Ohio: LOW SIDELOBE INTERFEROMETER ANTENNA PATTERNS; L. P. Jones, P. E. Taylor and C. W. Morrow, Melpar, Inc., Falls Church, Va.: DESIGN TECHNIQUES FOR A LIGHT WEIGHT HIGH POWER SPIRAL ANTENNA; Normand Barbano, Sylvania Electronic Systems, Mountain View, Calif.: PHASE DISTRIBUTION OF SPIRAL ANTENNAS

ROOM D / Session No. 24
Type of Session: Symposium
Title of Session: SYNTHESIS AND DESIGN OF MANNED MACHINE SYSTEMS
Chairman: Col. Lynn Baker, US Army, Chief Psychologist, Aberdeen, Md.
Speakers: R. H. Schneider, Dunlap and Associates, Inc., Santa Monica, Calif.: HUMAN FACTORS IN THE ESTABLISHMENT OF SYSTEM DESIGN REQUIREMENTS; Frank Marzocco, Thompson Ramo Wooldridge, Inc., Canoga Park, Calif.: THE HUMAN FACTORS

(Continued on Page 14)

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LABORATORY AS SYSTEM DESIGN TOOL; C. W. Miller and W. R. Minty, Cornell Aeronautical Laboratory, Inc., Buffalo, N. Y.: ON THE EFFECT OF CRT TRANSFER FUNCTION ON DETECTION THRESHOLD; Stanley Levine, Litton Industries, Beverly Hills, Calif.: INTRODUCTION TO TEACHING MACHINES

ROOM E / Session No. 25
Type of Session: Tutorial Papers
Title of Session: MICROMINIATURIZATION
Chairman: T. Liimatainen, Diamond Ordnance Fuze Laboratory, Washington, D.C.
Speakers: J. R. Black, Motorola Corp., Phoenix, Ariz.: DESIGN AND FABRICATION OF A MICROELECTRONIC IF AMPLIFIER; D. T. Levy, Radio Corporation of America, Somerville, N.J.: A PACKAGED MICROMODULE LABORATORY FOR INDUSTRY; G. P. Walker, Rheem Semiconductors, Inc., Palo Alto, Calif.: SEMICONDUCTOR PACKAGING FOR HIGH COMPONENT DENSITY APPLICATION; T. C. Hall, Pacific Semiconductors, Inc., Culver City, Calif.: SURFACE PASSIVATION AS APPLIED TO MICRO-COMPONENTS; J. Alegreti; Merck, Sharpe & Dohme, Rahway, N.J.: LAMINAR JUNCTION STRUCTURES: A NEW CONCEPT IN MICROCIRCUITRY; L. Kattner, J. Last, and J. Nall, Fairchild Semiconductor Corp., Palo Alto, Calif.: SOLID STATE MICROLOGIC ELEMENTS

ROOM A / Session No. 26
Type of Session: Panel Discussion
Title of Session: GOVERNMENT AND INDUSTRY: ENGINEERING PROPOSALS
Moderator: Cmdr. W. Ten Hagen, USN, Bureau of Weapons, Western District, El Segundo, Calif.
Panelists: James Tassen, Contracts Div., Bureau of Naval Weapons, Washington, D.C.; C. E. Petrillo, US Army Signal R&D Laboratory, Ft. Monmouth, N.J.; J. B. Lewi, Packard-Bell Electronics Corp., Los Angeles, Calif.; N. Klumph, Western Development Laboratories, Philco Corp., Palo Alto, Calif.; Ray Nordlund, Wright Air Development Division, Dayton, Ohio

ROOM B / Session No. 27
Type of Session: Related Papers
Title of Session: AIR TRAFFIC CONTROL (ATC) — SESSION II
Chairman: Glen Bieging, Packard-Bell Electronics Corp., Los Angeles, Calif.
Speakers: Lane L. Waldman, Librascope Div., General Precision, Inc., Glendale, Calif.: CENTRAL DATA PROCESSING OF ATC SYSTEMS: Norman Pomerantz, General Precision Laboratories Div., General Precision, Inc., Pleasantville, N.Y.: DATA PROCESSING REQUIREMENTS OF THE ATC SYSTEM: T. L. Bartlett, Radio Corporation of America, Camden, N.J.: AUTOMATION IN ATC; Howard K. Morgan, Bendix Aviation Corp., Detroit, Mich.: THE NEED FOR AUTOMATIC ATC: Guy Van Alstyne, Gilfillan Bros., Inc., Los Angeles, Calif.: FUTURE TRENDS IN ATC

ROOM C / Session No. 28
Type of Session: Contributed Papers
Title of Session: ANTENNAS, SESSION II
Chairman: Charles E. Dunn, Convair Div. of General Dynamics, Inc., Pomona, Calif.
Speakers: J. W. Eberle, Ohio State Univ., Colombus, Ohio: A CONTINUOUS BISTATIC ECHO AREA RANGE: Alfred Bogush, Radio Corporation of America, Moorestown, N.J.: FRESNEL REGION BORESIGHT METHODS; C. E. Hendrix and L. F. Van Buskirk, US Naval Ordnance Test Station, China Lake, Calif.: THE ZONE PLATE AS A FOCUSSING ELEMENT: D. F. Shea, D. Alstadter and W. O. Puro, Melpar, Inc., Falls Church, Va.: BEACON ANTENNAS FOR PROJECT MERCURY; F. P. Brownell and D. F. Kendall, The Martin Co., Denver, Colo.: MINIATURIZED CAVITY FED SLOT ANTENNAS

ROOM D / Session No. 29
Type of Session: Symposium
Title of Session: THE PIONEER V EXPERIMENTS
Chairman: C. P. Sonett, Space Technology Laboratories, Inc., Los Angeles, Calif.
Speakers: C. Y. Fan, P. Meyer and J. A. Simpson, University of Chicago, Chicago, Ill.: PRELIMINARY RESULTS FROM THE SPACE PROBE PIONEER V; R. L. Arnoldy, R. A. Hoffman and J. R. Winckler, University of Minnesota, Minneapolis, Minn.: RADIATION MEASUREMENTS MADE BY SPACE PROBE PIONEER V;

(Continued on Page 16)

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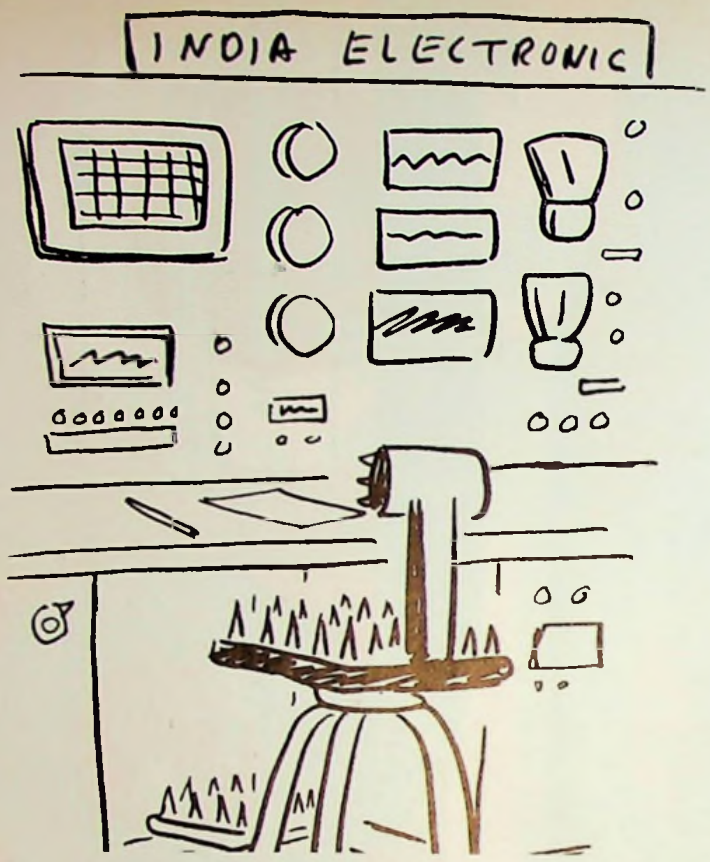

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Technical Program (Cont.) from Page 14

P. J. Coleman, D. L. Judge, E. J. Smith, and C. P. Sonett, Space Technology Laboratories, Inc., Los Angeles, Calif.: MEASUREMENTS OF THE GEOMAGNETIC AND INTERPLANETARY MAGNETIC FIELDS: PIONEER V; J. B. McGuire, D. D. Morrison and L. Wong, Space Technology Laboratories, Inc., Los Angeles, Calif.: DETERMINATION OF THE ASTRONOMICAL UNIT FROM A LEAST SQUARE FIT TO THE ORBIT OF PIONEER V

ROOM E / Session No. 30

Type of Session: Panel Discussion

Title of Session: MICROMINIATURIZATION

Moderator: W. V. Wright, Electro Optical Systems, Inc., Pasadena, Calif.

Panelists: W. B. Warren, Hughes Semiconductor Laboratories, Newport Beach, Calif.: M. Kahn, Sprauge Electronics, North Adams, Mass.; J. S. Kilby, Texas Instruments, Inc., Dallas, Texas; D. Mackey, Radio Corporation of America, Somerville, N.J.; H. C. Lin, Westinghouse Electric Corp., Pittsburgh, Pa.; G. J. Selvin, Sylvania Electric Products, Inc., Waltham, Mass.; E. E. Maiden, Pacific Semiconductors, Inc., Culver City, Calif.; R. Norman, Fairchild Semiconductor Corp., Palo Alto, Calif.

ROOM A / Session No. 31

Type of Session: Panel Discussion

Title of Session: SEEKING A LOGICAL BIOINSTRUMENTATION SYSTEM

Chairman: Vincent W. Blockley, Consultant: Environment Physiology, Santa Monica, Calif.

Moderator: Meyer Fishbein, System Development Corp., Santa Monica, Calif.

Panelists: David Douglas, Spacelabs, Inc., Van Nuys, Calif.; Louis Fields, Starling Corporation, Los Angeles, Calif.; Truman McNeely, North American Aviation, Los Angeles, Calif.; Miles McLennon, Chief of Medical Electronics—Bio-Medical Laboratory, Wright Air Development Center, Dayton, Ohio

Speakers: J. B. Dillon, M.D., University of California, Los Angeles, Calif.: THE ANESTHETIZED INDIVIDUAL IN A NORMAL ENVIRONMENT; Travis Winsor, M.D., Los Angeles, Calif.: THE UNHEALTHY, CONSCIOUS INDIVIDUAL IN A NORMAL ENVIRONMENT; Patrick Meehan, M.D., University of Southern California, Los Angeles Calif.: THE HEALTHY, CONSCIOUS INDIVIDUAL IN AN ABNORMAL ENVIRONMENT; Paul Tiffany, System Development Corp., Santa Monica, Calif.: COMPUTERS AND PROGRAMMING IN A BIOINSTRUMENTATION SYSTEM

ROOM B / Session No. 32

Type of Session: Contributed Papers

Title of Session: MILITARY ELECTRONICS

Chairman: Lt. Col. Raymond Isenson, Office Deputy Commander Army, Pacific Missile Range, Pt. Mugu, California

Speakers: B. H. Baldridge, General Electric Co., Utica, N.Y.: SYSTEM IMPLICATIONS OF ELECTRONIC ANCESTOR WORSHIP; C. K. Chappuis, System Development Corp., Santa Monica, Calif.: IMPLEMENTATION OF A MODERN COMMUNICATION SYSTEM ON NATIONAL AND GLOBAL SCALES; Meyer Cook and C. Keeler, Convair Astronautics, San Diego, Calif.: AUTOMATIC PROGRAMMING OF GROUND SUPPORT CHECKOUT EQUIPMENT USING COMPUTER TECHNIQUES; E. L. Danheiser and M. Korsen, Radio Corporation of America, Moorestown, N.J.: THE BMEWS AUTOMATIC MONITORING SYSTEM

ROOM C / Session No. 33

Type of Session: Symposium

Title of Session: INFORMATION THEORY AND MODULATION METHODS

Moderator: Bernard Oliver, Hewlett-Packard Co., Palo Alto, Calif.

Panelists: Conrad Hoeppner, Radiation, Inc., Melbourne, Fla.: Subject: PTM/AM; R. L. Sink, Consolidated Electro Dynamics, Pasadena, Calif.: Subject: PCM/FM: Kenneth Uglow, Electromechanical Research, Inc., Orlando, Fla.: PDM: M. B. Rudin, Aeronutronic Systems, Inc., Newport Beach, Calif.: PACM/FM; J. W. Halina, International Telephone and Telegraph Co., Nutley, N.J.: DSSB/AM; Ray Sanders, Space Electronics Corp., Glendale, Calif.: DICILOCK; James L. Hollis, Rixon Electronics, Silver Spring, Md.: SEBIT 25; John Taber, Space Technology Laboratories, Inc., Los Angeles, Calif.: TELEBIT

(Continued on Page 18)

Technical Program (Cont.) from Page 16)

ROOM D / Session No. 34
Type of Session: Symposium
Title of Session: OPERATION AND TRAINING OF MANNED MACHINE SYSTEMS
Chairman: H. M. Parsons, System Development Corp., Santa Monica, Calif.
Speakers: Douglas Ellis, Hughes Aircraft Co., Culver City, Calif.: MODEL FOR AUTOMATING MAINTENANCE FUNCTION; John B. Teeple, Thompson Ramo Wooldridge, Sierra Vista Ariz.: A MODEL FOR RELATING HUMAN FACTORS TO ADP SYSTEMS PERFORMANCE; Milton Grodsky and Gerrard W. Levy, The Martin Company, Baltimore, Md.: HUMAN MAINTENANCE FUNCTIONS IN MAN-MACHINES; James W. Singleton, System Development Corp., Santa Monica, Calif.: HUMAN FACTORS IN SYSTEM OPERATIONS AND TRAINING

ROOM E / Session No. 35
Type of Session: Contributed Papers and Panel
Title of Session: VEHICULAR COMMUNICATIONS II: MOBILE RADIO AND PAGING SYSTEM
Chairman and Moderator: Kenneth T. Corner, Comm. Dept., City of Los Angeles, Calif.
Panelists: R. T. Buesing and N. H. Sheperd, General Electric Co., Lynchburg, Va.: SYSTEM PERFORMANCE, COMPATIBILITY AND STANDARDS; T. H. Yaffe, Bendix Radio Div., Bendix Aviation Corp., Baltimore, Md.: PERSONAL TWO WAY RADIO COMMUNICATION SYSTEM FEATURING MODULAR CONSTRUCTION; J. F. Mitchell, Motorola, Inc., Chicago, Ill.: PERSONAL RADIO PAGING IN THE VHF BAND; G. A. Brookes, Westrex Corp., Los Angeles, Calif.: POLICE AND FIRE DEPARTMENT COMMUNICATION CENTERS: A SYSTEM APPROACH TO THE CONTROL CONSOLE AND THE RELATED FACILITIES

ROOM A / Session No. 36
Type of Session: Panel Discussion
Continuation of Session No. 31

ROOM B / Session No. 37
Type of Session: Contributed Papers
Title of Session: CODING METHODS AND TELEMETRY
Chairman: A. V. Balakrishnan, Space Technology Laboratories, Inc., Los Angeles, Calif.
Speakers: G. E. Reis and C. E. Land, Sandia Corp., Albuquerque, N.M.: AN IMPROVED FM DISCRIMINATOR DETECTOR FOR AIRBORNE TELEMETRY RECEIVERS; Floyd M. Gardner, Gardner Research Co., Orange, Calif.: IMPROVED DOVAP TRANSPONDER; John C. O'Brien, Technical Specialist, Pomona, Calif.: OPTIMIZED DATA SYSTEMS; J. J. Metzner and K. C. Morgan, Research Div., New York University, New York, N.Y.: RELIABLE FAIL-SAFE BINARY COMMUNICATION; Helmut Schwab, Applied Development Corp., Hawthorne, Calif.: DATA COMPRESSION

ROOM C / Session No. 38
Type of Session: Symposium
Continuation of Session No. 33

ROOM D / Session No. 39
Not scheduled.

ROOM E / Session No. 40
Type of Session: Contributed Papers and Panel
Title of Session: VEHICULAR COMMUNICATIONS III: NEW IDEAS AND CONCEPTS FOR MOBILE TELEPHONE OPERATION
Chairman and Moderator: A. Culbertson, Lenkurt Corp., San Carlos, Calif.
Panelists: R. T. Crabb, Mobilfone Corp., Los Angeles, Calif.; A. R. Ogilvie, Secode, Corp., San Francisco, Calif.; Charles W. Schwieger, Pacific Telephone and Telegraph Co., San Diego, Calif.
Speakers: E. S. Randel, American Telephone and Telegraph Co., New York, N.Y.: APPLICATION OF TRUNKING PRINCIPLES TO MULTICHANNEL MOBILE TELEPHONE SERVICE; D. H. Hamsher, US Army Signal R&D Laboratories, Ft. Monmouth, N.J.: SYSTEM CONCEPTS FOR ADDRESS COMMUNICATION SYSTEMS; J. R. Stewart, Motorola, Inc., Chicago, Ill.: PUSH-BUTTON MOBILE DIAL RADIOTELEPHONE: AN ADVANCED CONCEPT IN COMMON CARRIER MOBILE SERVICE; Willard S. Felch, American Telephone and Telegraph Co. New York, N.Y.: A THREE-CHANNEL SINGLE SIDEBAND MULTIPLEXED FM MOBILE RADIO SYSTEM USING TRANSISTORIZED VEHICLE TERMINAL EQUIPMENT: William B. Smith, Bendix Radio, Div. of Bendix Aviation Corp., Baltimore, Md.: GUARDED TONE SIGNALLING

WORKSHOP I
Location: To be announced.
Type of Session: Round table discussion with panel
Title of Session: MANAGEMENT OF MANNED MACHINE SYSTEMS
Moderator: R. L. Clark, Department of Defense, Washington, D. C.
Panelists: Robert Gilson, Stromberg-Carlson Co., San Diego, California; Edward Speakman, Radio Corporation of America, Camden, N.J.; William Duke, Space Technology Laboratories, Los Angeles, California.; Frederick Seufert, Hoffman Electronics Corp., Los Angeles, Calif.
(This is a continuation of Session No. 4)

WORKSHOP II
Location: To be announced.
Type of Session: Round table discussion with panel
Title of Session: ANALYSIS OF MANNED MACHINE SYSTEMS
Moderator: Lt. Col. Anthony Debbons, Rome Air Development Division, Rome, N.Y.
Panelists: L. Blumstein, Cornell Aeronautical Laboratory, Buffalo, N.Y.; L. Seale, Bell Aircraft Corp., Buffalo, N.Y.; M. Adelson, Hughes Aircraft Co., Fullerton, Calif.; A fourth panelist to be announced.
(This is a continuation of Session No. 14)

WORKSHOP III
Location: To be announced.
Type of Session: Round table discussion with panel
Title of Session: SYNTHESIS AND DESIGN OF MANNED MACHINE SYSTEMS
Moderator: D. T. McRuer, Systems Technology, Inc., Los Angeles
Panelists: R. K. Ausbourne, Hughes Aircraft Corp., Culver City, Calif.; W. Evans, Aeronutronic Systems, Inc., Newport Beach, Calif.; L. Christie, System Development Corp., Santa Monica, Calif.; Harold Van Cott, International Business Machines Corp., Bethesda, Md.
(This is a continuation of Session No. 24)

WORKSHOP IV
Location: To be announced.
Type of Session: Round table discussion with panel
Title of Session: OPERATION AND TRAINING OF MANNED MACHINE SYSTEMS
Moderator: J. Lyman, University of California, Los Angeles, Calif.
Panelists: J. Bialek, Stanford Research Institute, Palo Alto, Calif.; J. Maatsch, System Development Corp., Santa Monica, Calif.; L. Stovanoff, Hoffman Electronics Corp., Los Angeles, Calif.; A fourth panelist to be announced.

WOMEN'S SESSION
Location: Statler-Hilton Hotel
Session No.: Special Session
Type of Session: Invited speakers with audience participation
Title of Session: ENGINEERING: THE WOMAN'S ROLE
Speakers: Rosemary M. Bernstein, Douglas Aircraft Co., Inc., Los Angeles, Calif.: THE WOMAN'S POSITION IN ENGINEERING; Barbara B. Leitner, Santa Monica, Calif.: DEBUGGING THE ENGINEER; Other speakers to be announced.

Remember WESCON Dates

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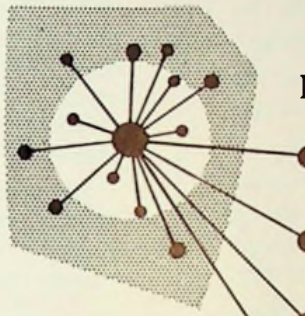

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WESCON Roundup (Cont.) from Page 12

format is simple and effective. In advance, factory men indicate the representatives with whom they wish to confer. Chairman W. Bert Knight, once all the requests are confirmed, makes a master chart for 20 separate conference sessions during the day. Each attending rep, distributor, or factory man has his full day of individual conferences all mapped out ahead of time. when the bell rings signalling the end of a session, he "table-hops" to his next appointment.

The day starts out with an eye-opening continental breakfast in the foyer of the Ambassador ballroom, breaks for luncheon at noon, and pauses for a mid-afternoon coffee-break.

It's a rare oportunity for factory people and their reps to get together for a series of bedrock sales strategy meetings.

Women's Activities

A "Polynesian Holiday" will entertain an expected 4000 women who will accompany their husbands to WESCON.

Under direction of Mrs. Jeff Montgomery and Mrs. Don Larson, the women's committee has created a social schedule intended to focus attention on the highlights of the Southland — in ways that will appeal to local women as well as visitors from other areas.

The leisurely pace of the islands has been woven into the four-day plan. Headquarters will be an "island retreat" created in the lush East Garden Room of the Statler-Hilton, scene of a get-acquainted party the morning of August 23 and an island punch party that afternoon. Special surprises on following days include tours of outstanding private homes, luncheon at the Santa Ynez Inn, a tour of Disneyland, and a "Tamaara" luncheon at the famed Polynesian in Palos Verdes.

Women will also attend the special technical session, "The Woman's Role in Engineering," and on WESCON's final day, they'll enjoy a swim party poolside at the Statler. Final event is an all-industry luncheon for women, with a featured speaker "and all the trim-

(Continued on Page 21)

WESCON Roundup (Cont.) from Page 20

mings."

Registration

The logistics of registering 35,000 people at WESCON is a problem that calls for a sizeable "team" of planners. Gerry Goldenstern has taken on the task for the second time, with help from Harry J. Delaney and a worthy crew of volunteers.

Innovations is the key word in this year's plans for handling the throngs. For example, exhibitors who order complimentary tickets to WESCON in advance will pay only for those actually used this year, thanks to an electronic tabulating system. What's more, they'll receive a post-show roster of exactly which of their invited guests did attend.

Nonlinear Systems is supplying electronic counters that will display actual attendance by day and cumulatively at the registration headquarters, and there are special registration facilities for exhibitors and other members of the WESCON official family.

All procedures have been blueprinted, corrected, and shaped into final form, and Goldenstern's troops will "dry-run" the whole operation several times before the doors of the big show open for the first time.

Industrial Design

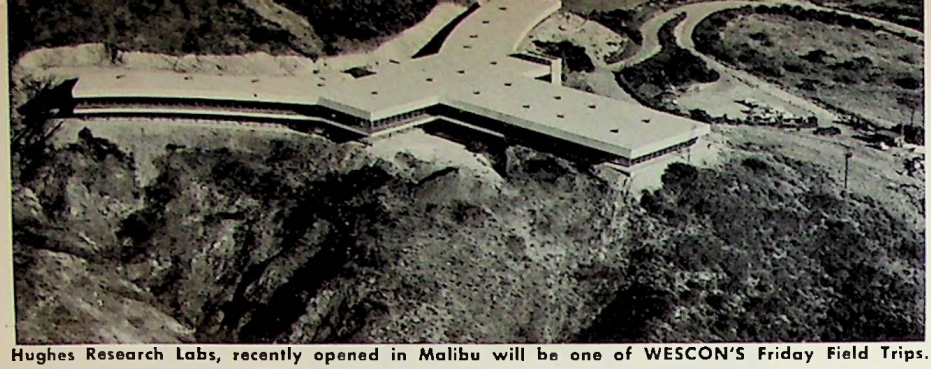
The second annual Industrial Design competition — held to display the finest creative work of electronics "package" designers — will be a major point of interest at WESCON.

Ken Slee of Librascope, who heads a committee of engineers, designers, and design consultants, said that emphasis in this show will be on showing "the relationship of good design to the eventual success of an electronic product."

The competition has received official blessings from both the American Association of Industrial Designers and the Industrial Design Institute, and a jury of prominent national design authorities has been selected.

Awards of commendation and of excellence are presented to winning entries. The show will occupy a window-walled display area in the

(Continued on Page 22)



Hughes Research Labs, recently opened in Malibu will be one of WESCON'S Friday Field Trips.

Offer 12 Field Trips on WESCON Slate

Arthur N. Curtiss, RCA, Chairman of the 1960 Field Trip Committee has announced the following schedule:

TUESDAY, August 23, 1 p.m.: Jet Propulsion Laboratory and California Institute of Technology (both Pasadena).

WEDNESDAY MORNING, August 24: Space Technology Laboratories (developmental laboratories for earth satellites and space probe vehicles).

WEDNESDAY AFTERNOON: Packard-Bell Electronics and Telemeter Magnetics Corp. (both West Los Angeles).

WEDNESDAY EVENING: System Development Corp. (Santa Monica).

THURSDAY, August 25, 8 a.m.: Rocketdyne, Division of North American Aviation Inc. (Chatsworth).

THURSDAY, August 25, 1 p.m.: Radio Corp. of America and Thompson-Ramo-Wooldridge (both West San Fernando Valley).

THURSDAY, August 25, 1 p.m.: International Telephone and Telegraph, Librascope Division of General Precision, Computer Measurements (Glendale-Burbank).

FRIDAY, August 26, 8 a.m.: Hughes Aircraft research laboratories (Malibu).

WESCON Roundup (Cont.) from Page 21

main concourse of the Sports Arena.

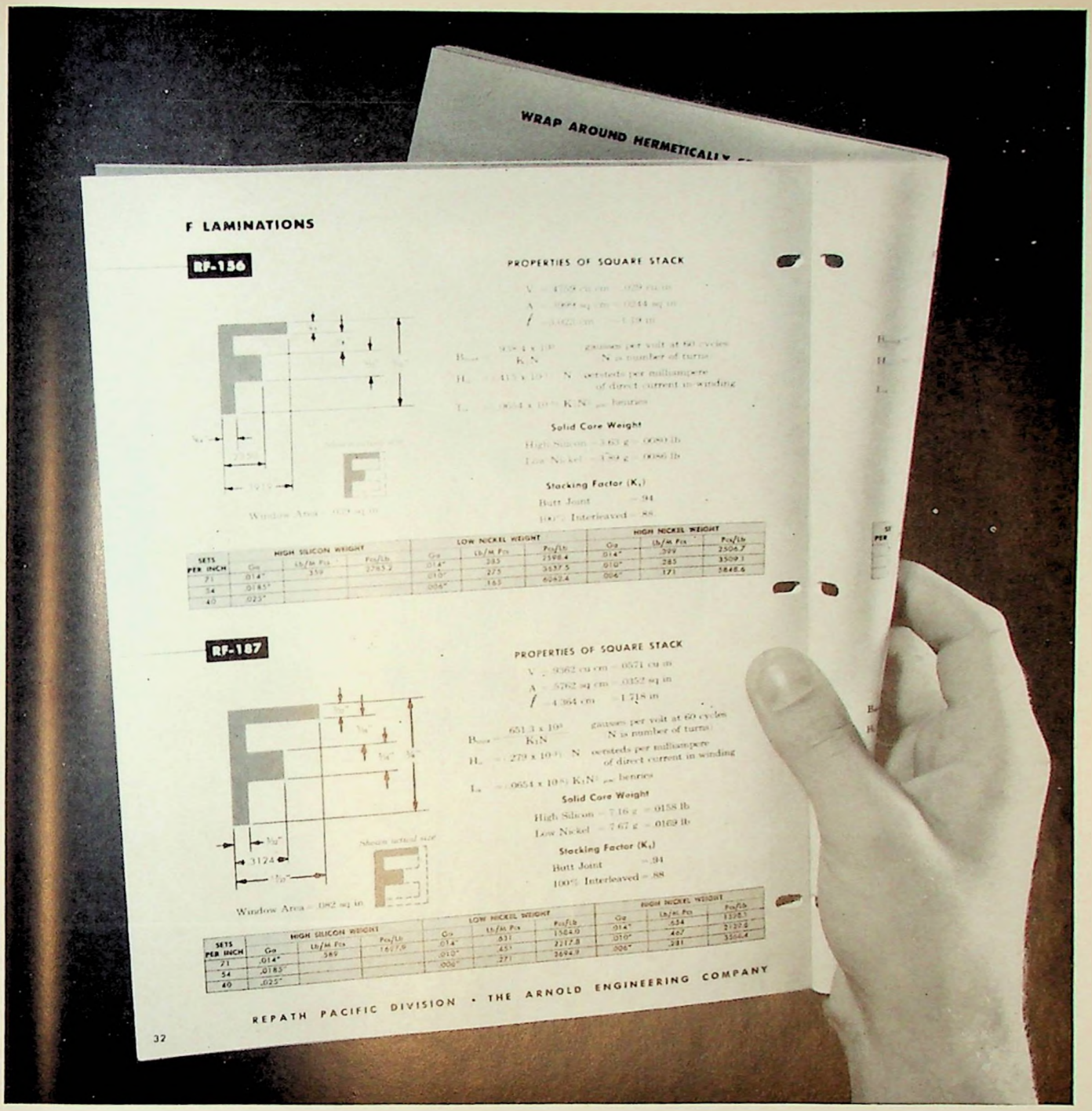
Facilities

The monumental requirements of the nation's second largest technical convention for transportation, signs, audio-visual equipment, special items of furniture, and hundreds of other materials is lumped under an innocent-sounding committee nomenclature: "Facilities."

Don Montgomery, Duane Wood, and their committeemen — separated into several subcommittees— are in the rapid transit business in a big way, with daily shuttle bus service to the Sports Arena from several downtown locations, busses for eight field trips, and busses for several different women's programs and Future Engineers activities.

In addition, they've kept signpainters, carpenters, and other craftsmen busy for more than a month. The audio-visual contract, involving the requirements for a dozen different kinds of slide, film, and photo illustrations of technical papers, is another area of major responsibility.

(Continued on Page 30)



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Herodotus, the historian, records (490 B.C.) the use of burnished shields for military signaling. This was the forerunner of the heliograph, invented by Sir Henry C. Mance, which came into wide use centuries later.

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COMMUNICATIONS

Lockheed's interest in developing the science of communications extends from the depths of the oceans to deep space. Its Missiles and Space Division research programs deal with the development and application of statistical communication and decision theory in such areas as countermeasures; telemetry multiplexing and modulation; scatter communications; multiple vehicle tracking; millimeter wave generation and utilization; sonic signal detection and processing; avoidance of multipath degradation; and interference avoidance.

Associated research and development efforts are directed toward propagation studies and advanced antenna design; low noise amplifiers; vehicle borne signal transmission and reception, data storage and processing; solid state materials and devices.

The scope of such activities extends from advanced studies of naval communication problems on and under the oceans; the many applications to satellite vehicles; on to the specialized communication problems of deep space explorations. Latter needs are exemplified by high frequencies, low weight and power, high stability, low effective bandwidth, extreme reliability and basic simplicity requirements.

Engineers and Scientists: Investigating the entire spectrum of communications is typical of Lockheed Missiles and Space Division's broad diversification. The Division possesses complete capability in more than 40 areas of science and technology — from concept to operation. Its programs provide a fascinating challenge to creative engineers and scientists. They include: celestial mechanics; communications; computer research and development; electromagnetic wave propagation and radiation; electronics; the flight sciences; human engineering; magnetohydrodynamics; man in space; materials and processes; applied mathematics; oceanography; operations research and analysis; ionic, nuclear and plasma propulsion and exotic fuels; sonics; space medicine; space navigation; and space physics.

If you are experienced in work related to any of the above areas, you are invited to inquire into the interesting programs being conducted and planned at Lockheed. Write: Research and Development Staff, Dept. H-101, 962 W. El Camino Real, Sunnyvale, California. U.S. citizenship or existing Department of Defense industrial security clearance required.

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Take the "Radio" Out of IRE Name Urges Dr. Radius

(The foregoing article by Dr. Clarence Radius, SM, IRE, California Polytechnic College, San Luis Obispo, is offered as opinion upon which Seventh Region members may care to comment. It does not represent the viewpoint of the IRE, or the GRID-BULLETIN; it does offer food for thought. Harold Hendricks, also SM, IRE, Cal Poly, joins Dr. Radius in presenting the article.)

Certainly the majority of members of THE INSTITUTE OF RADIO ENGINEERS appreciate the fact that our society is first and primarily a professional subject matter society. The organization of Professional Groups and the publication of the Transactions is a noteworthy advancement in technical communications. However, having become the world's largest technical society, we find that we are taking a second place in the broad professional leadership demanded of us in this highly technical age. Our relationship to other professional societies and to our technical and business associates leaves much to be desired.

"Radio" Outdated

As a group of engineers we are known by the name of our society. No one will deny that we have outgrown the name "radio". The name and symbol of our society conveys a very limited concept of the nature of our field. Professionally and occupationally the term "radio" no longer represents our field. A review of employment ads in professional journals and newspapers would imply that the field designated as "radio engineering" no longer exists. Federal Agencies have dropped the classification of "radio engineer".

Three "C's"

The history of several engineering and scientific societies both in this country and Great Britain reveals an evolutionary change in name. Probably the first step in relating ourselves to the world around us calls for a definitive statement of our field. Recently, a large corporation suggested the 3C's of Electronics - Computers, Controls and Communications. This suggest a rather all inclusive definition without reference to a narrow segment of the industry. Our field might be defined as that branch of engineering which is primarily concerned with the transmission, reception and utilization of electromagnetic energy for all types of communication, automatic control and high speed computation. Today we think of this as "electronic engineering".

One of the distinguished past presidents of our society has used "electronic engineering" in several of his written statements, particularly in addressing himself to the engineering student members of the society. Recently, an IRE National Newsletter announced a brochure entitled "Electronics as a Career". A leading eastern dean of engineering recently stated that the term "electronics" now embraces all of the traditional and new subject matter areas in electrical engineering. (This statement could be viewed with some alarm.) The same journal which carried the dean's statement now frequently refers to its domain as electrical/electronic engineering. Just one more step might delete the term "electrical."

World-Wide Society

In addition to a possible change in the name of the society relative to our true subject matter area, consideration should be given to the international character of the society. Already we have a foreign vice president, foreign Sections and Student Branches plus an International Convention. We might consider another "I" for International.

Many forces are at work today which can affect the professional career of all engineers. The Institute of Radio Engineers has been relatively inarticulate with respect to these forces. The world's largest engineering society is not identified in the educational world with a sound program in its subject matter area. Our voice in ECPD (Engineers' Council for Professional Development) is inaudible. The growing importance of professional registration and the influence of

(Continued on Page 34)

Individuality

alone is not a true measure of an engineer's creativeness

Of course, it helps a bit.

But we're not asking you to jog around the neighborhood in Bermuda shorts or a souped up Model A to prove you can think for yourself. If, however, this somehow stimulates your thinking process, be our guest.

The main point is, RCA West Coast does not believe an engineer's creative abilities fit a specific pattern. Some of our engineers are conformists. Some are not. Some are individualists. Some are not. But *these* prime creative qualities they all share—courage, competence, optimism, and the ability to work together as a team. Solving difficult engineering problems. Right now we're looking for these able additions to this group:

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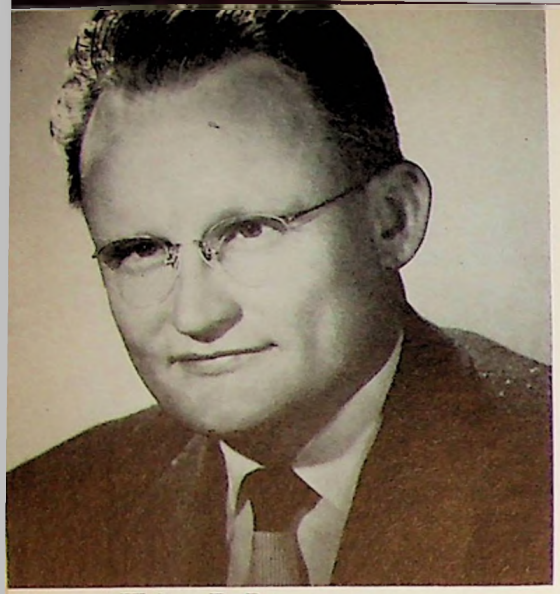

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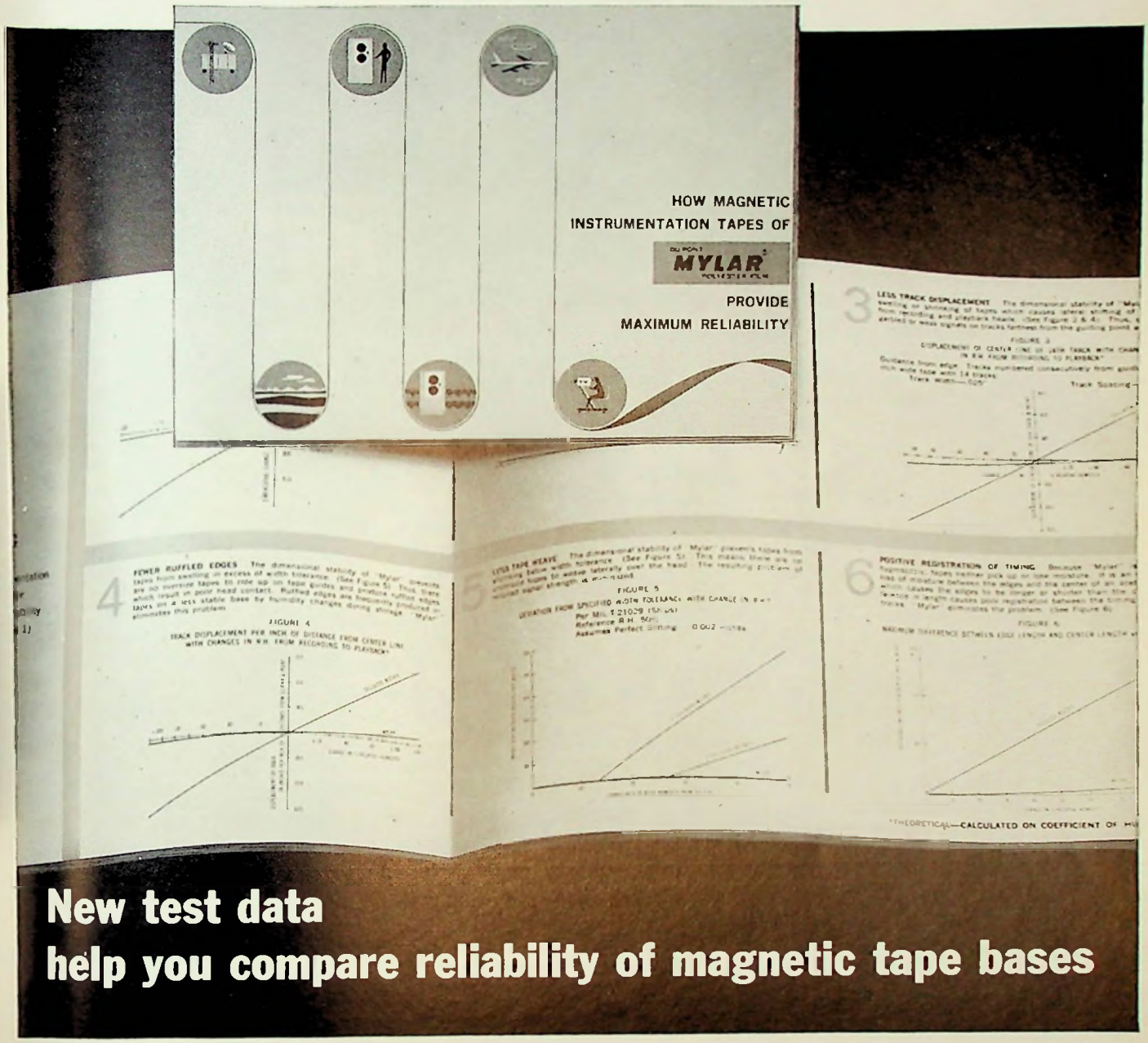

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IRE OFFICIALS CONFER in Los Angeles. From Left: Wes Carnahan, Seventh Region Director, C. F. Horne, National IRE Director, Ronald McFarlan, National IRE President, Burgess Dempster, LA Section Chairman.

WESCON Roundup (Cont.) from Page 22

To supplement the air-conditioned Sports Arena, WESCON has built a "tent that's not a tent" annex to the arena. The specially designed structure will look like a tent from the outside — but its interior will be more like a building, with hard-walls eight feet high, a special double ceiling, and only about half the usual vertical members required for a tent 400x140 feet. Its walls will actually house air-conditioning ducts, and a 150-ton mobile air-conditioning unit— designed to meet the specifications of the annex — will keep things cool throughout the show.

Another major construction job will be undertaken inside the arena itself, where five meeting rooms for technical sessions, each with a capacity of 600 persons, will be built in the arena's seating area on the concourse level. Plastic wall materials which have met and passed all acoustical tests will be erected on three sides around each seating section. Technical session attendees will be seated in the foam-rubber, theater-type seats of the arena and will look down to the speaker's rostrum. The general appearance of each room will approximate that of a surgical amphitheater, without obstructions of any kind.

Visitors Services

If any visitor gets turned around on the freeway system during WESCON and winds up in Ventura instead of Exposition Park, it'll be because he just didn't "ask."

Al J. Rissi and Cap Kierulff have the WESCON responsibility for giving "the word" to Los Angeles visitors on directions, times and places, and a hundred other matters pertinent to WESCON. Their Visitors Services Committeemen, supplemented with some professional help, will maintain information centers in the Statler-Hilton, Biltmore, and Ambassador hotels, all in addition to two message and information centers in the Sports Arena. At the show, they'll take advantage of a special Vicon closed-circuit TV paging system to display business messages throughout the arena and annex, and will have an audio call system available for special uses.

Hospitality

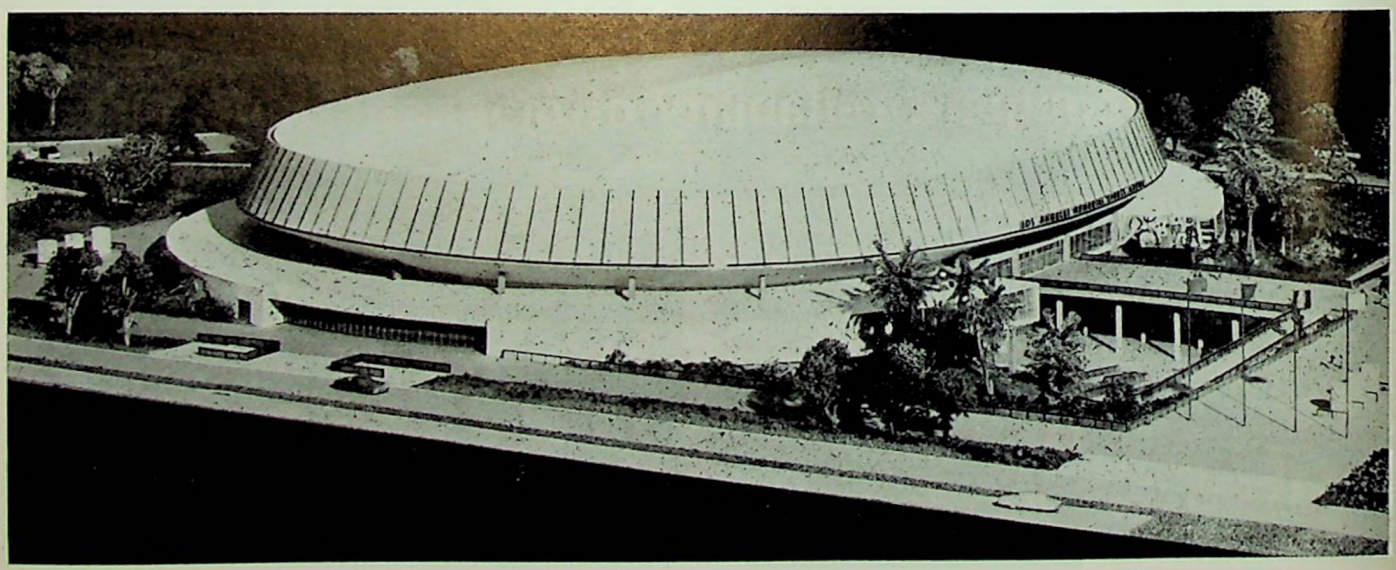
WESCON's special guests — including major speakers, industry leaders, and other VIPs — will be hosted by the Hospitality Committee on behalf of WESCON's directors, and headed by Chairman Burgess Dempster and Vice Chairman John J. Guarrera.

Special guests will be met at the airport, and will have a headquarters room at the Statler. They will have been pre-registered, with their credentials already in order at their arrival, and will be shown other courtesies.

Public Relations

The Public Relations committee has had at least one of its members assigned to each of the other WESCON committees

(Continued on Page 32)



MODEL OF THE SPORTS ARENA, site of this year's WESCON.

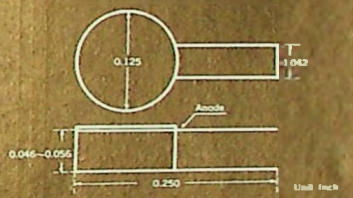
ESAKI DIODE
(TUNNEL DIODE)

INVENTED BY
Dr. ESAKI
OF

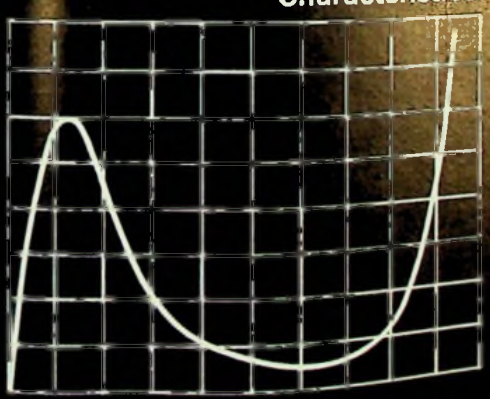
SONY

Now Available

Construction	Germanium Alloy Junction Type Diode.
Use	Low level high speed switching. Digital pulse circuits, memory matrices, Negative resistance Amplifiers.
Features	Frequency capability is a few Gigacycles. Good temperature stability. Rugged construction.

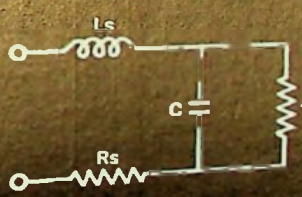


Characteristics.



Ip	2mA±10%
Iv	0.44 mA max
Vp	65 mV mean V
Vv	350 mV mean V
Ip/Iv	5 min
Vs	450~500 mV

Equivalent circuit



-R	70 Ω mean
C	7 μμF mean
Rs	2 Ω max
Ls	≃0.4 mμH mean

TYPICAL SELF-RESONANT FREQUENCY ≃ 3 GC
SWITCHING SPEED a few mμs.
"

SONY CORPORATION
TOKYO, JAPAN

For further information: SONY CORP. OF AMERICA : 514 BROADWAY, NEW YORK 12.

VALLEY SUB-SECTION offers Barbershop Quartet as part of its Gay Nineties Dance, a pre-WESCON activity.

San Fernando Valley Sub-Section

Valley Features Gay 90's Theme at Annual Installation Dance

Subject: Gay Nineties Dinner-Dance
Date: Saturday, August 6, 1960
Place: Sportsmen's Lodge
12833 Ventura Boulevard
North Hollywood
Time: 6:00 p.m. Cocktails
7:00 p.m. Dinner
8:30 p.m. Ladies to the Parlor
Gents to the Drawing Room
9:00 p.m. —
1:00 a.m. Dancing
Cost: $11.50 per couple
Reservations: Jack Wills, Dickens 3-9958
John Brown, Empire 3-0892

Why not relax and enjoy yourself at a Gay Nineties Dinner-Dance? The setting for just such a semi-formal affair will be at the Sportsman's Lodge in North Hollywood on Saturday, August 6, 1960. The occasion is the annual San Fernando Valley Sub-Section Installation Dinner-Dance. Danceable music plus a Barbershop Quartet will highlight the evening. The Sportsmen's Lodge will have adequate parking facilities for those who wish to arrive on a bicycle built for two. However, the management has respectfully requested that all horse and buggy owners use horseless carriages. All IRE members and their guests are reminded to place reservations early by calling Jack Wills or John Brown.

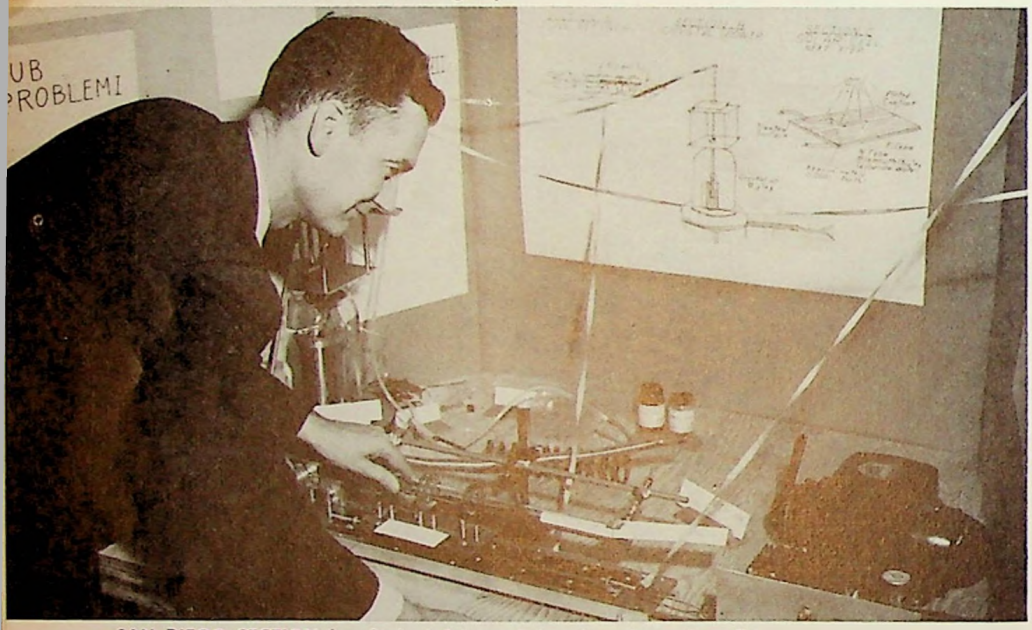
WESCON Roundup (Cont.) from Page 30

throughout the planning stages that started as early as last fall. Their job has been to counsel the other committees in phases of their work which involved publicity and public relations considerations, to aid them in preparation of printed communications, and to provide liaison between the committees and WESCON's publicity representatives.

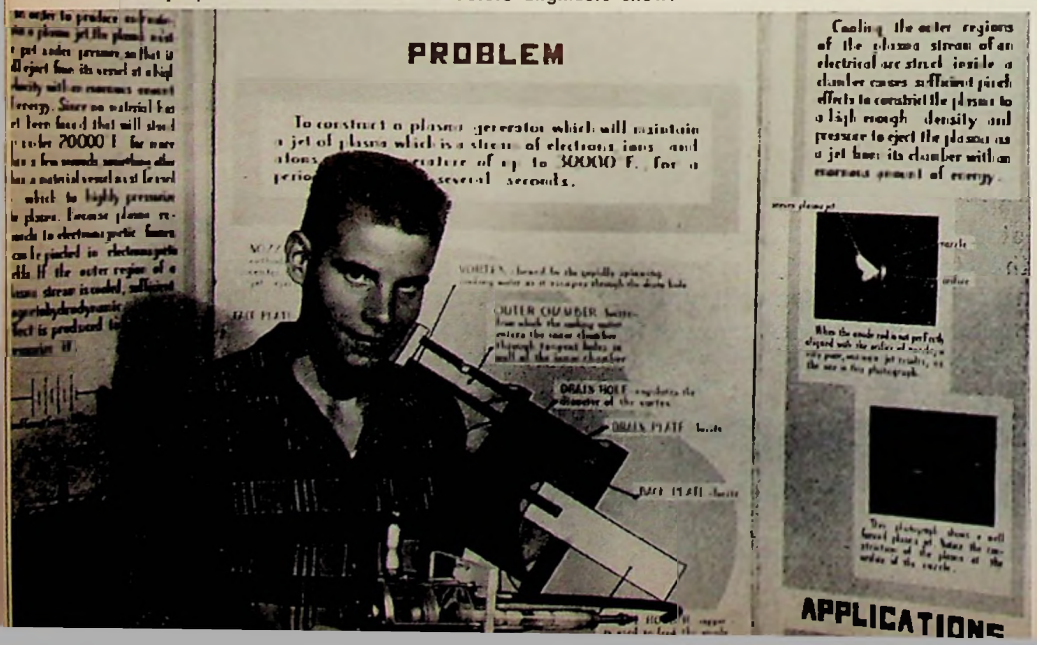
Willard Gregory is chairman and Richard Paullus is vice chairman of the Public Relations committee, which also has been active in the planning of WESCON pressroom operations, the opening ceremony, and similar projects.

DR. RONALD McFARLAN, National IRE president, second from left, visited San Francisco in May. Others: From left: Major Otis Hill, chairman, PG MIL Chapter, Victor Corey, San Francisco Section chairman, Alan Waterman PG CS chairman, Albert Morris, WESCON Director, and Stanley Kaisel, San Francisco Section Secretary.

THOMAS H. MORRIN Stanford Research Institute, director of engineering, studies a Future Engineer exhibit on solar cells made by John Krieg, Acalanes HS, Lafayette, in the San Francisco Section. Morrin chaired FE selection group.



SAN DIEGO SECTION has invited Science Fair prize-winner Russell Lyon to present his "Plasma Jet" project at the 1960 WESCON Future Engineers show.



Gundy to Take Bay City WEMA Post

Philip L. Gundy
Succeeds Fergusion in WEMA, SF

The election of Philip L. Gundy, vice-president and general manager of the Ampex Corporation's International Operation, Redwood City, California, to succeed S. A. Ferguson as vice-president of the Board of Directors of the Western Electronic Manufacturers Association and Chairman of the Association's San Francisco Council, has been announced.

In addition to being active in the Western Electronic Manufacturers Association, Gundy is a member of the Institute of Radio Engineers, the Armed Forces Communications Association, the Engineering Society of Detroit, the Society for the Advancement of Management, the American Management Association, and the Research Institute of America.

IRE Name Change (Cont.) from Page 26

the NSPE (National Society of Professional Engineers) can not be ignored by the "electronic engineer". We should work more effectively with the EJC (Engineers' Joint Council) to improve our relations with other important engineering societies. Recent developments in the formation of multiple engineering unions could lead to serious changes in our professional status.

This is not a plea for "status". It is a plea for broad professional leadership on the part of The Institute of Radio Engineers.

C. Radius, SM'43
H. Hendriks, SM'55

Seventh Region Sponsors WESCON for IRE

To understand the term "Seventh Region", IRE, is to understand the total IRE structure, since the Region sits at mid-level in IRE organization.

The Section is the basic IRE operating unit, usually covering a major city with electronics activity. There are more than one hundred IRE Sections in America and abroad, each of which conducts its own affairs according to a constitution from National Headquarters.

Within each Section are Professional Group Chapters, given Section financial and administrative support. However, each Chapter is part of a National Professional Group, a parallel National Headquarters function.

Region Picture

Sections are grouped into Regions, of which there are seven in the US. Region Eight is Canada.

The Regions are set up on the basis of transportation and communications areas.

The Region functions as a lead-in to the National Board of Directors, since each Regional Director is a Director. It handles matters of concern between Sections and for its area as a whole.

Seventh Region Territory

The Seventh Region operates in ten Western States including: Alaska, Arizona, California, Hawaii, New Mexico, Oregon, Utah and Washington. All IRE activities in Montana and Idaho are under the Seattle, Wash. Section.

There are fifteen Sections in Region Seven: Alamogordo-Hollonan, Albuquerque-Los Alamos, Anchorage, China Lake (Calif.), Fort Huachuca, Hawaii, Los Angeles, Phoenix, Portland, Sacramento, Salt Lake City, San Diego, San Francisco, Seattle and Tucson.

Regional Director is Wesley Carahan, who resides in the San Francisco area.

The Seventh Region Committee under Carnahan consists of the Chairman of each Section, plus a Vice-Chairman, a Secretary-Treasurer, one delegate additionally from each Section (usually the jun-

(continued on Page 42)

WESCON Committee Chairmen Direct 300 Workers

It takes more than 300 people to staff the functioning WESCON committees, from the technical program to Visitor's Services. Each WESCON function comes under the direction of a chairman and vice-chairman. This year the committee leaders are as follows:

ALL-INDUSTRY LUNCHEON: Edward C. Bertolet (Behlman Engineering) and E. H. Lockhart (Radiatronics).

COCKTAIL PARTY: William J. Miller (Burton Manufacturing) and Robert L. Boniface (Neely Enterprises).

DISTRIBUTOR CONFERENCE: W. Bert Knight (W. Bert Knight Co.) and R. V. Weatherford (R. V. Weatherford Co.).

EXHIBITS: Ernest Clover (Triad Transformer) and Herb Becker (Herb Becker Co.).

FACILITIES: Donald N. Montgomery (Aeronutronic) and Duane Wood (Lockheed Aircraft Service).

FIELD TRIPS: A. N. Curtiss (RCA) and Eugene M. Knight (Space Technology Labs.).

FUTURE ENGINEERS: Joel H. Axe (Ramo-Wooldridge) and Col. Frank J. Shannon, Sr., USAF (Ret.) (Packard-Bell).

HOSPITALITY: Burgess Dempster (Electronic Engineering) and John J. Guarrera (Burton Manufacturing).

INDUSTRIAL DESIGN: Kenneth J. Slee (Librascope) and Robert C. Saunders, Jr. (Benson-Lehner).

PUBLIC RELATIONS: Willard B. Gregory (Beckman Instruments) and Richard L. Paullus (Electronics Investment Management Corp.).

REGISTRATION: G. Goldenstern (Hoffman Electronics) and Harry J. Delaney (Hughes Aircraft).

TECHNICAL PROGRAM: Richard G. Leitner (System Development Corp.) and Harper Q. North (Pacific Semiconductors).

VISITORS SERVICES: Al J. Rissi and C. T. "Cap" Kierulff (Kierulff Electronics).

WOMEN'S ACTIVITIES: Mrs. Jeff Montgomery and Mrs. Don Larson.

Television Was Big at 1950 WESCON

A look back into WESCON history shows that many things were similar, many different a decade ago.

The 1950 WESCON was held in Long Beach, Calif. September 13-15, chaired by Seymour Johnson, KFI. Robert L. Sink was Los Angeles Chairman, IRE and was IRE host. Lew Howard, Triad, was WCEMA chairman, now WEMA.

Back then it was designated the "Sixth Annual IRE West Coast Convention and Pacific Electronic Exhibit". The name shortening to "Western Electronic Show and Convention — WESCON" was a boon to printer committee officials.

Eleven Sessions

There were 11 Sessions, with the technical program introduced by Dean Terman, Stanford, speaking on "West Coast Electronics Not Only has a Future, But Also a Long and Significant Past".

There was a session on radio standards, on a new novel electronic organ, by Robert Strassner, USC, and a paper on "A Psychologists View of the Engineer, by Robert Ross, Long Beach College.

There were "meat-and-potato" sessions on Electron Tubes, Circuits, Components, Computers, Audio, Antennas and Propagation, and Instrumentation.

Familiar names of speakers included Dr. John Pierce, Bell Labs, speaking on "Recent Traveling Wave Tubes at Bell", John K. Hilliard and Dr. John G. Frayne in the Audio Symposium, Dan Noble, Motorola on "The Sensicon Receiver System", Harper North, Northrop, on Germanium Diodes, Elliott Levinthal, Varian, on "Nuclear Fluxmeter" (the only case where "nuclear" appears as a title of a paper), and Schott, Day and Trolese of the Naval Electronics Labs.

Session chairmen included: F. M. Ashbrook of Inyokern, Wes Carnahan (1960 7th Region Director) N. D. Webster of Sacramento, E. W. Thatcher of San Diego, S. D. Bennett of Seattle, and L. C. Van Atta and Francis Moseley of L.A. W. R. Hewlett, San Francisco, was an IRE Director at Large and a session chairman.

FCC Commissioner George Sterl-

(Continued on Page 44)

Seventh Region

Region Director Discusses WESCON and Region Conference

With the conclusion of the recent highly successful 1960 Seventh Regional Conference in Seattle during the last week in May, there comes a lull in 7th Region activities, when it might be of interest to examine the relationship between WESCON and the Regional Conference.

The members of the Seventh Region constitute 22% of the entire IRE membership, but their geographical distribution within the Region is far from uniform. Seventy percent live in the vicinities of San Francisco and Los Angeles; Seattle, Portland and San Diego add another ten percent. The remaining twenty percent are scattered over the approximately million square miles of the Region, bounded by Albuquerque-Los Alamos to the east, Honolulu to the west, Fort Huachuca to the south, and Anchorage, Alaska to the north.

Reason for Conference

With geographical separations of a thousand miles on the average, it is obvious that at least thirty percent of our members could only rarely benefit from attendance at WESCON. It was to supply this need that the Regional Conference was established in 1953, with the location rotating among the Sections outside San Francisco and Los Angeles. In size, the Regional Conference does not compare with WESCON, of course. Attendance is usually predominantly local in origin. The technical content is excellent, with speakers drawn from all parts of the country, and a quite adequate technical exhibit is shown.

When WESCON is held in Los Angeles, the Regional Conference is taken by a northern Section; when it is in San Francisco, a southern Section takes the Conference. In this way, a technical conference and exhibit is available to every member within a fairly reasonable distance, each year.

Close Relationship

The relations between WESCON and the Regional Conference are quite close and harmonious. The experience of the WESCON Board is always available to the Section

(Continued on Page 45)

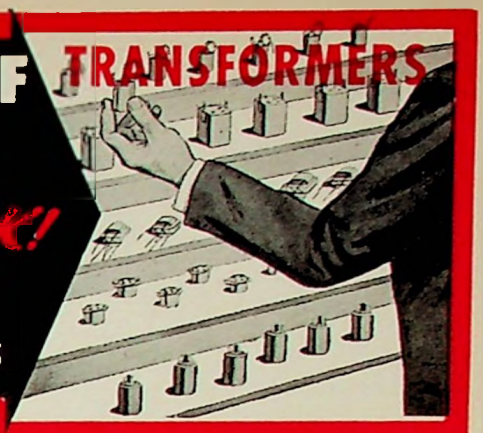
ULTRA MINIATURE TRANSISTOR

Open-frame (-F)* Wt. .08 oz. size 3/8" x 3/8" x 11/32"
Molded (-M)* Wt. .14 oz. size 1/2" x 1/2" dia.
Nylon Bobbin, Nickel-Alloy Core.

Part Number	Application	Primary Impedance (DC)	Secondary Impedance
UM 21*	Input	100,000	1,000
UM 22*	Driver	20,000	1,000
UM 23*	Driver	20,000	1,200 C.T.
UM 24*	Output	1,000	50
UM 25*	Output	400	50
UM 26*	Output	400	11
UM 27*	Output	400 C.T.	11
UM 28*	Choke	10 Hy. (0 dc)	8 Hy (.5 ma) 650

*Add either -F or -M to designate construction. See catalog.

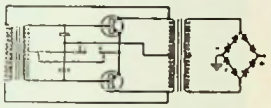
OFF THE SHELF DELIVERY FROM STOCK! delivered in 24 hours



DC-DC CONVERTER

All Items Designed for 13.6V. Except 8034 which is for 28V Input.

TYPICAL DC-DC CONVERTER CIRCUIT



Part Number	Total V.A. Output	D.C. Output F. W. Bridge Volts	F. W. Bridge Ma.	C.T. Full Wave Volts	C.T. Full Wave Ma.
M8034	125	500	250	250	420
M8035	125	500	250	250	420
M8036	40	450	90	225	155

SILICON RECTIFIER
Power Supply

Circuitry Primary 105/115/125 Volts**.
Hermetic sealed to MIL-T-27A
See Catalog for additional information.

Part Number	Secondary A.C. Volts	Rectifier Circuit R.M.S. Amperes	C.T.** Full Wave	F.W.** Bridge
M8018*	18.5 C.T.	1	7V.	14V.
M8019*	18.5 C.T.	3	7	14
M8020*	35 C.T.	3	14.5	29
M8021*	70 C.T.	1	30	60
M8022†	18.5 C.T.	3	7	14
M8023†	35 C.T.	3	14.5	29
M8024†	70 C.T.	1	30	60

*380-1600 Cy. †50-60 Cy. **DC output volts stated are for resistive or inductive loads. Capacitor imput may be used if RMS AMPS is not exceeded.

TRANSISTOR OUTPUT

Frequency Response
200-15,000 ~
See catalog for case size

Part Number	Application	Pri. Imp.	Sec. Imp.	Level Watts
M8008	P.P. Output to Spkr.	25	3-4	3
M8007*	P.P. Auto Transf.	30 C.T.	4	2
M8009	P.P. Output to Spkr.	48 C.T.	3.2/8	5
M8010	P.P. Coll. to Servo	120 C.T.	1,000	6
M8011	P.P. Output to Spkr.	125 C.T.	3-4	1.5
M8012*	P.P. Coll. to Servo	140 C.T.	500	6
M8013*	P.P. Output to Spkr.	250 C.T.	3-4	.4
M8014	P.P. Output to Spkr.	400 C.T.	11	.25
M8015	P.O. Coll. to Servo	1,600 C.T.	800	2.5
M8016	P.O. Output to Spkr.	2,550 C.T.	12	.10

*Bi-Filar wound to minimize switching transients.

TRANSISTOR DRIVER

Designed specifically for transistor, servo and audio
Frequency response 70-20K
Size AF mill through AH Hermetically sealed to MIL-T-27A.
EPOXY MOLDED See catalog for exact sizes and weights.

ON SPECIAL ORDER ONLY Part Number	Application	Pri. Imp.	Sec. Imp.	Pri. D.C. Unbal Ma.	Level Watts
M8002*	Coll. to P.P. Emit.	560	400 C.T.	18	.15
M8003*	Coll. to P.P. Emit.	625	100 C.T.	20	1.5
M8004	Coll. to P.P. Emit.	5,400	600 C.T.	15	.075
M8005	Coll. to P.P. Emit.	7,000	320 C.T.	7	.040
M8006	Coll. to P.P. Emit.	10,000	6,500 C.T.	.75	.005

*Bi-Filar wound to minimize switching transients.

LOW LEVEL CHOPPER

Efficiently transfers 30 to 500 cps. Transducer or Thermocouple signals to instrument amplifiers. Signal level range from .5μV. to .5 volts. Resin impregnated to minimize mechanical vibration noise signal. Low hum pick up assured by 3 mu-metal and 2 copper shields.

Part Number	Turns Ratio Full Pri. To Full Sec.	½ Pri. To Full Sec.	Ind. of Full Pri. @ .5V 60 Cycles	Imped. of Full Pri. @ .5V 60 Cycles
M8025	1:7.7	1:15.4	17.5	6,600
M8026	1:3.2	1: 6.4	60 Hy	22,500

Part Number	D.C. Resistance Full Pri.	Sec.	Mag. Shield.	Hght.	Dia.	Wt. Oz.
M8025	365	4140	90 DB	1 25/32	1 3/8 D	4.5
M8026	455	3500	90 DB	1 25/32	1 3/8 D	4.5

MINIATURE TRANSISTOR

Available in 8 case types.
Hermetic(-H) 15/16" x 1 3/16", Wt. 1¾ oz.
Molded(-M) 7/8" x 7/8" x 1 15/32", Wt. 1½ oz.
Open Frame(-F) ¾" x 1" x 13/16", Wt. 1 oz.

Part Number	Application	Pri. Imp.	Sec. Imp.
MT1*	Line to Emit.	600	600
MT7*	Coll. to P.P. Emit.	25,000	1,200 C.T.
MT8*	P.P. Coll. to P.P. Emit.	25,000	1,200 C.T.
MT9*	Line to P.P. Emit.	600 C.T.	1,200 C.T.
MT11*	P.P. Coll. to P.P. Emit.	4,000 C.T.	600 C.T.
MT13*	P.P. Coll. to Speaker	4,000 C.T.	3.4
MT14*	Coll. to Speaker 2N179	400	10
MT15*	P.P. Servo Output 2N57	500 C.T.	210
MT18*	P.P. Coll. to P.P. Emit.	25,000 C.T.	1,200 C.T.
MT23*	P.P. Coll. to Servo	250 C.T.	1,000

Add either -AG, -H, -M, -FB, -FPB, -A, or -P to Part Number to designate construction. See catalog for detailed information.

MICRO MINIATURE TRANSISTOR

Available in 4 case types
Hermetic (-H) 15/16" x 1 1/16", wt. ¾ oz.
Open Frame (-F) 7/16" x 19/32" x ¾", wgt. 4 oz.

Part Number	Application	Pri. Imp.	Sec. Imp.
MMT 5*	Coll. to Speaker	50,000	6
MMT 7*	Coll. to P.P. Emit.	25,000	1,200 C.T.
MMT 9*	Line to P.P. Emit.	600 C.T.	1,200 C.T.
MMT 10*	Coll. to Emit.	25,000	600
MMT 11*	P.P. Coll. to Emit or Line	4,000 C.T.	600 C.T.
MMT 12*	Coll. to Speaker	2,000	3.4
MMT 16*	Coll. to P.P. Emit.	10,000	1,500 C.T.
MMT 17*	P.P. Coll. to P.P. Emit.	10,000 C.T.	200 C.T.
MMT 18*	P.P. Coll. to P.P. Emit.	25,000 C.T.	1,200 C.T.
MMT 19*	Coll. to P.P. Emit.	2,500	2,500 C.T.

*Add either -M or -H to part number to designate construction. See catalog for detailed information

VERI-MINIATURE TRANSISTOR

Open Frame(-F)* Wt..16 oz. size 7/16" x 7/16" x ½"
Frame(-FB)* Wt..2 oz 15/32" x 7/16" x 17/32"
Molded (-M)* Wt. ½ oz. 9/16" x 9/16" x ½" high
4" color coded leads, resin impregnated.

Part Number	Application	Primary Impedance (DC)	Secondary Impedance (DC)
VM 3*	Interstage	25,000	600 (1 ma)
VM 4*	Input or Interstage	200,000	1200 (.72 ma)
VM 5*	Interstage	50,000	600 (1.0 ma)
VM 6*	Interstage	100,000	1200 C.T. (.72 ma)
VM 7*	Output	500 (3.5 ma)	3.4
VM 9*	Output	1250 (2.0 ma)	50
VM 10*	Interstage	2,500 (1.5 ma)	2500 C.T.
VM 11*	Choke	20 Hy. (0 ma)	12 Hy. (.5 ma)
VM 12*	Interstage	20,000 (.75 ma)	1000
VM 13*	Interstage	20,000 .72 ma)	1000 C.T.

*Add either -F, or -M, or -FPB to part number to designate construction. See catalog.

PLUG-IN INPUT

Matches commercial recorder and amplifiers.

Magnetic Shielding 65db. Frequency response 20-20,000 ± 2db Octal Type Plug.

Available on special order with alternate plug-in headers or hermetically sealed.

Part Number	Primary Impedance	Secondary Impedance
M8030*	250/50 C.T.	50,000
M8031	600 C.T./150	50,000
M8032†	250 C.T.	50,000
M8033†	50 C.T.	50,000

*M8030 designed as replacement for Ampex No. 1733-1
†M8032 and M8033 mates with sockets on many RCA amplifiers.

Australian IRE Makes Powers a "Companion"

Dr. Ralph L. Power
—made good in Australia, too.

In "the land down under" the Australian Institute of Radio Engineers nearly a score of years ago invited Dr. Ralph L. Power to become a Companion.

This grade is not comparable to any U.S. IRE grade but is midway between a Senior Member and a Fellow.

Power was selected because of his years of experience and affiliation with the Broadcasting Service Assn., Macquarie Network and other Australian activities.

A year ago the Council in Sydney nominated him to be an honorary life member and at the general membership annual meet late in April he was unanimously elected.

USC Professor

Dr. Power, L.A. IRE member, is a onetime USC professor and is an editor emeritus with Hoffman Electronic Corp.

He served five years each as publicity director for both WESCON and WEMA years ago and the same period of time as executive secretary-treasurer of the local chapter of The Reps, which is now ERA.

His new life membership in Australia was largely because of his knowledge and study of radio theory, wireless history, the economics of communications and corporate structure and administration.

Scientists Examine Acoustic Endurance at Cocktail Parties

A major theory of group-dynamical psychobiophysics has been overthrown. Some months ago William R. MacLean of the Polytechnic Institute of Brooklyn predicted that the noise level at cocktail parties should show a discontinuity at a critical point, when speech at a conversational level is rendered unintelligible by the arrival of additional guests. At that point each speaker would raise his voice, leading to an abrupt increase in noise level. The prediction has now been put to the test by R. F. Legget and T. D. Northwood of the National Research Council of Canada. Their verdict: Not true. Large parties, at least, simply become noisier and noisier, up to a peak of 80 to 85 decibels, a level "not quite high enough to cause permanent impairment of hearing."

Legget and Northwood obtained recordings and other data from eight parties given by professional societies and other organizations. The number of guests at each ranged between 100 and 700. Seven were cocktail parties. The exception was a coffee party. "It was exceptional also," they write in *The Journal of the Acoustical Society of America,* "in that the participants were librarians, *i.e.,* a group dedicated professionally to maintaining quiet . . . Despite this handicap, they managed to hold their own with the true cocktail party-goers."

NATIONAL IRE OFFICERS at 1959 All-Industry Luncheon, SF. Dr. Weber, IRE president, Donald Sinclair, Vice-president, George Bailey, Executive Secretary, Larry Cumming, Technical Secretary, E. K. (Woody) Gannett, PROCEEDINGS Managing Editor.

One "Observer" Lost

Data from one party had to be discarded because of the observer's too liberal interpretation of instructions "not to allow observational work to interfere unduly with other duties." Records from the other seven gathering revealed a nearly straight-line increase in noise as guests arrived, with no evidence of an abrupt transition. The peak noise-level was reached about 25 minutes after the parties started, and thereafter, in the "mature stage," remained constant.

The two specialists in alcoholic

(Continued on Page 42)

Seventh Region (Cont.) from Page 35

ior past Section Chairman) and the Chairman, Region Sub-Committee on Education, appointed by the national education committee.

This group meets three times a year: at the IRE show, WESCON and at the Region Conference.

A Seventh Region Conference is held each year at one of the Sections other than San Francisco or Los Angeles which Sections carry the load for the Region at WESCON, and are thus fully occupied with that activity.

The Conference is held in the Spring of each year. This year it was in Seattle in May. Next year it will be in Phoenix, April 26-28, and in 1962 in Salt Lake. In 1963 it will be in San Diego. Region Conference budget is on the order of $20,000, as this is both an exhibit as well as technical program convention. Each Section contributes according to its membership for financial support of the Region.

Seventh Region Award

One of the main jobs the Region does for its WESCON operation is to select an Electronic Achievement Award winner who is honored at the WESCON All-Industry Luncheon.

The Region is a unifying factor among the exuberant Western IRE Sections whose activities and interests are as wide and deep as the amazing electronics industry itself.

Sound of Cocktails (Cont.) from Page 41

acoustics concede that the MacLean effect might occur at parties with 10 to 50 guests. Such parties, however, are not commonly run by professional societies. The experimenters reluctantly abandoned a scheme to set up artificial parties in this range, because "even assuming that guests and observers would donate their services, there is a residual financial problem that has not yet been solved."

—Reprinted "Science and the Citizen" column, April 1960 issue, SCIENTIFIC AMERICAN by permission of publisher

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The WESCON Convention Record Will be on sale at the Show!

DESIGN WITH ARNOLD 6T CORES . . .

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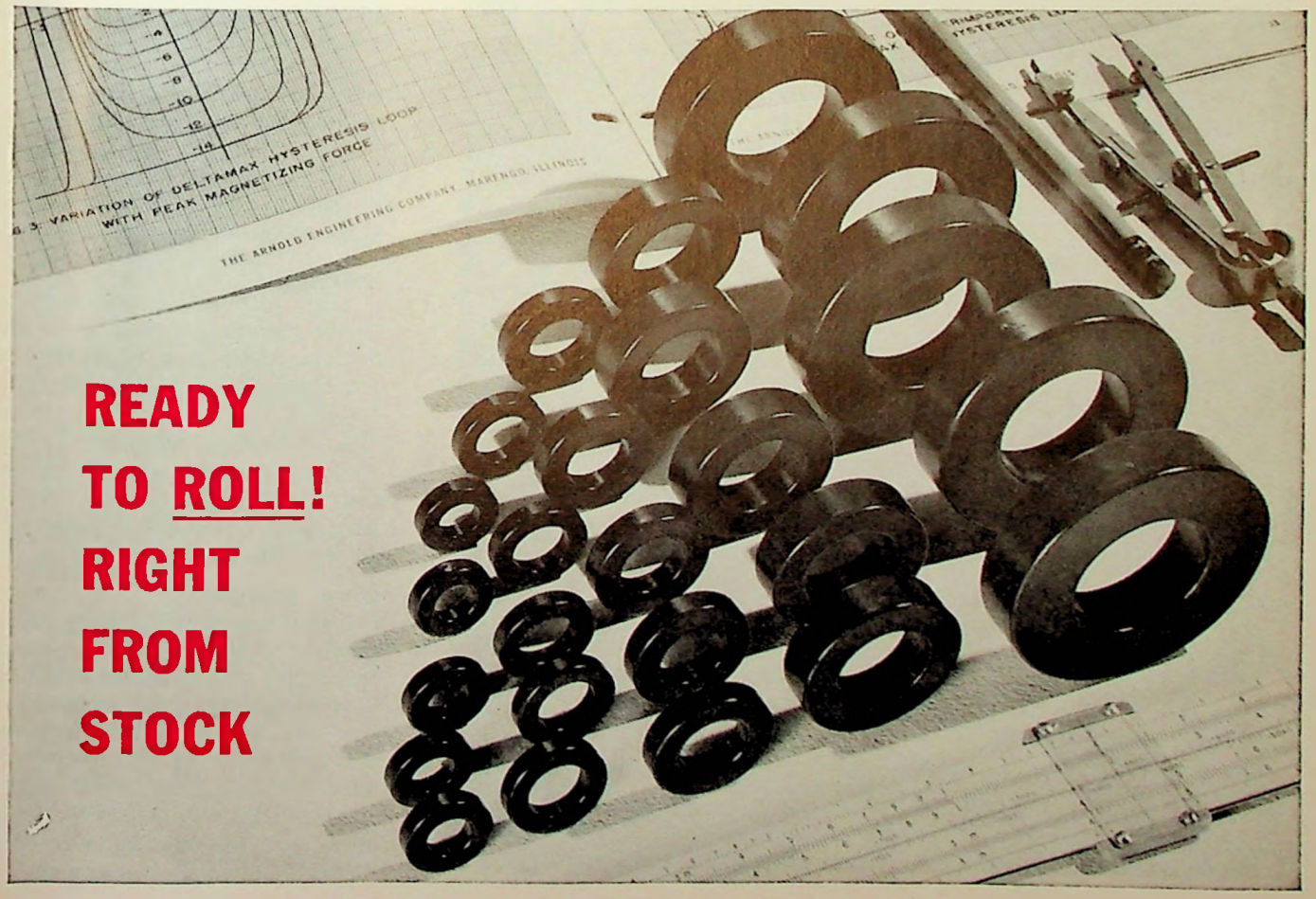

San Francisco Chooses Dunn for Chairman

Elections in the Bay area were conducted again this year by means of a mail ballot — a perforated section of a page in the May issue of the *Grid* having been devoted to this purpose. Results, first announced at the Section's Annual Meeting June 14, are as follows:

Donald A. Dunn, who divides his time between the electronic research laboratories of Stanford, and Eitel-McCullough Inc., where he recently became director of the research division, was elected chairman.

Stanley Kaisel, president of Microwave Electronics Corporation, Palo Alto, became vice chairman; Peter D. Lacy, vice president and director of engineering for the recently formed Wiltron Company of Palo Alto is secretary; and Charles Susskind, professor of electrical engineering at the University of California, Berkeley, was chosen as treasurer.

Albert J. Morris, senior vice president, engineering, at Levinthal Electronic Products (subsidiary of Radiation Incorporated), was designated Section director.

WESCON 1950 (Cont.) from Page 37

ing headed the TV panel which struggled with the "difficulties and trends" of TV. Color was mentioned — there was no word about quiz scandals or payola.

Field Trips

Trips included a tour of Long Beach Harbor, the Harbor Radar Station, ABC's new television center, Hoffman Radio, and Northrop and UCLA.

At Northrop visitors saw the Computing center with its BINAC computer and the recently unveiled MADDIDA, electronic digital differential analyzer.

Other Activities

There was a social program including a cocktail party, honorary luncheon for Fellows and a banquet. The women had a full program under Mrs. Robert Sink. There was a Distributors Panel Meeting session.

On the Exhibit side of the fence, there were 154 exhibits in the Long Beach Municipal Auditorium.

1960-61 Officers for the Los Angeles Section were officially announced during the Section's Annual Installation Dinner Dance, June 18, 1960. They are: Walter Hausz, Chairman: Vice-Chairman to be announced: Secretary, Dr. Henry L. Richter, and Treasurer, A. J. F. Clement. John K. Hilliard and Ellis F. King were elected Members-at-Large.

Western Welcome (Cont.) from Page 5

papers submitted for consideration could find a place in the program of some 40 sessions. But the salutary result of such forced and limiting selection is a program and an exhibit of content and proportions to challenge and stimulate rather than to satiate or overwhelm.

Variety and substance find place not only in the formal technical program, but in the many special events and activities which have come to be integrated as indispensable parts of WESCON. The Future Engineer's Show and the Industrial Design competition deserve major mention in this category, as do the social events, the women's activities and the field trips.

WESCON means many things to many people. Its typical smooth functioning gives no intimation of the countless hours of effort invested over the past year by those responsible for this phenomenon. But the results proudly speak for themselves. And those who have so generously donated their talents consider the return on their investment to be satisfactory indeed if you, our 1960 WESCON visitors, enjoy your time with us. It's all for you!

VICTOR B. COREY
Chairman, 1959-60
San Francisco Section, IRE

WESCON & 7th Region Confer. (Cont.) from Page 38

holding the Conference, and in particular, the invaluable services of Don Larson are loaned for preliminary planning of the Conference.

Other Regions have the same problem of exposing their junior members to an occasional good technical conference and exhibit, but the Seventh Region, with WESCON and its roving Regional Conference, should take pride in really being out ahead in its solution.

Wes Carnahan
Seventh Region Director

July Advertiser's Index

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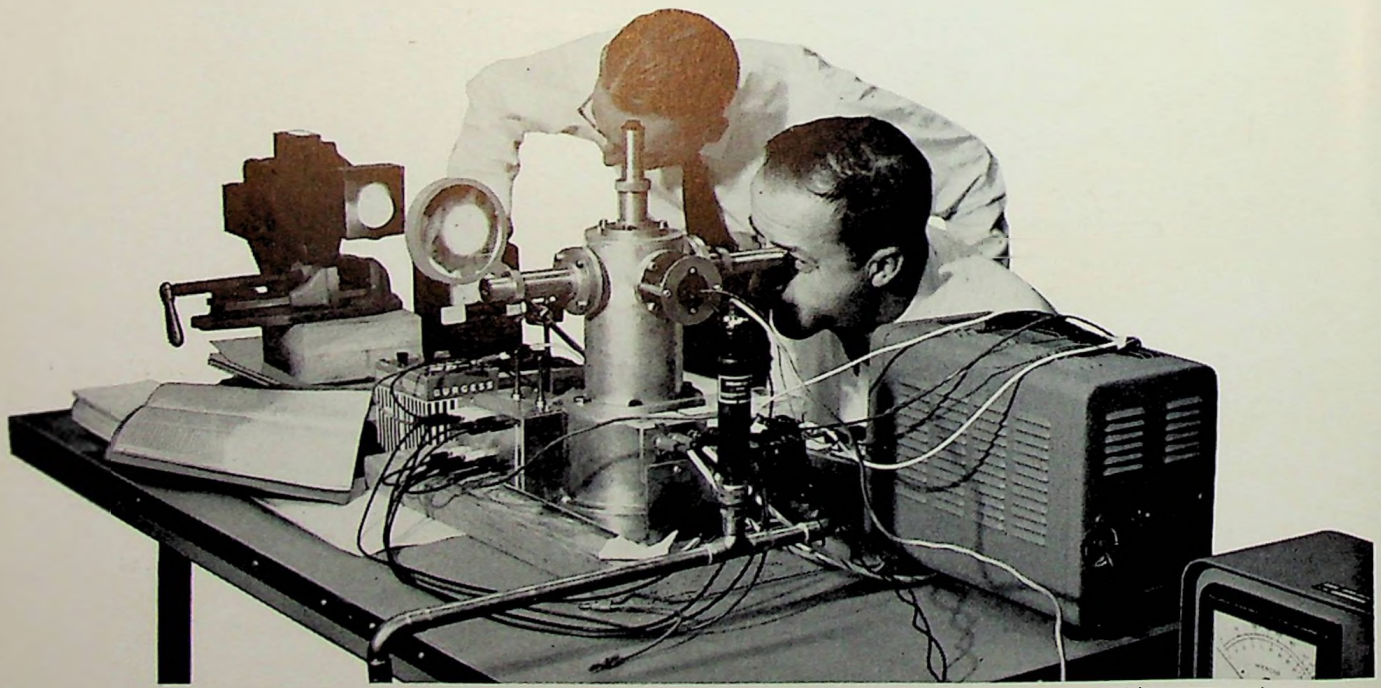

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