EDITOR'S PROFILE of this issue

from a historical perspective …

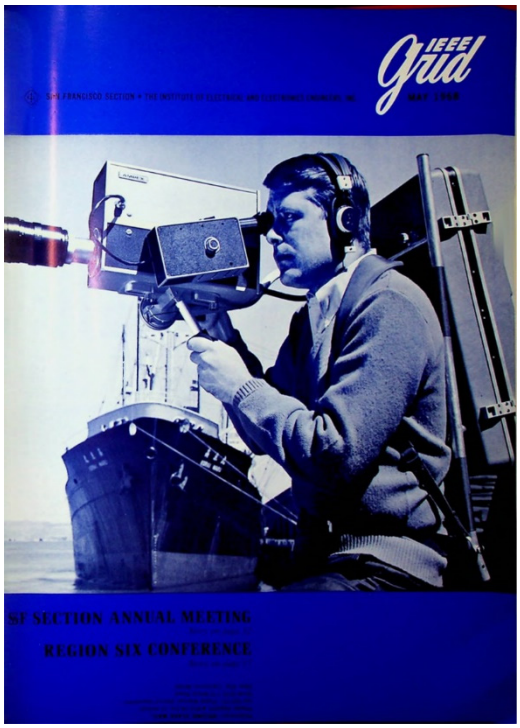
with Paul Wesling, SF Bay Area Council GRID editor (2004-2014)

May, 1968:

Cover: Ampex's latest portable color video camera and recorder are demonstrated.

Page 13: R.G. (Bob) Stewart talks about a new field, Reliability Physics. He becomes a key Valley person in the reliability field. I worked with him in the Reliability Chapter.

Page 17: Among the speakers at the Region 6 conference in Portland is Walter Brattain, co-inventor of the transistor (with William Shockley) while both worked at Bell Labs in the late '40's.



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

IEEE Grid

MAY 1968

SF SECTION ANNUAL MEETING

Story on page 12

REGION SIX CONFERENCE

Story on page 13

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Brief Specifications

Print Cycle Time: 50 ms, asynchronous.

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Print Command Required: Positive or negative pulse, 2 to 20 V amplitude, 1 V/μs minimum rise time, 6 μs or greater in width. AC coupled; without storage, 4.5 to 20 V amplitude, 20 μs minimum width.

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NEELY SALES REGION

CALENDAR

AEROSPACE & ELECTRONIC SYSTEMS Story on page 16 **Annual barbeque steak dinner and winetasting.** See map on page 16.

June 5, Wed. 6:30 PM, Paul Masson Historic Mountain Winery, Saratoga. No phone reservations: mail check for $4.75 per person to Al Hastings, 3940 Grove Ave., Palo Alto 94303, no later than May 20th. Limited capacity.

ANTENNAS & PROPAGATION Story on page 6 **Review of holography.** Wright Huntley, Jr., Hewlett-Packard Co., Palo Alto. **Election of Officers**

May 9, Thurs. 8 PM, Lockheed Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto. Dinner: 6 pm, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Order from menu. Reservations: Dr. Glenn Keitel, 294-6414 ext. 2206 by May 9th.

AUDIO & ELECTROACOUSTICS Story on page 8 **Acoustic trauma from rock & roll music** as compared to symphonic music. Kenward S. Oliphant, Acoustical Consultants Inc., San Francisco.

May 16, Thurs. 8 PM, Stanford Research Inst., Conference Room B, 333 Ravenswood Ave., Menlo Park. Dinner: 6 pm, Atherton Club, El Camino, Menlo Park. Reservations: Jim Daniels 292-4025 by May 15th.

AUTOMATIC CONTROL Story on page 10 **ELECTION OF OFFICERS FOR 1968-69! Orbital gyrocompassing.** Dr. Jack Rodden, space systems div., Lockheed M&S Co.

May 21, Tues. 8 PM, Univ. of Santa Clara Engineering Center, Room 551. Dinner: 6:30 pm, Le Boeuf (old Luccas) Restaurant, across from the University. Order from menu. No reservations required.

CIRCUIT THEORY Story on page 14 **Panel discussion on Modern Active Filter Design Techniques.** Dr. W.J. Kerwin, NASA; Prof. S.K. Mitra, U.C. Davis; H.J. Orchard, Lenkurt Electric Co. and Prof. G. Rigby, U.C. Berkeley.

May 22, Wed. 8 PM, Room 134 McCullough Bldg., Stanford. Dinner 6 pm, Red Cottage, 1706 El Camino, Menlo Park. Order from menu. Reservations: Mrs. Stressner, 367-3112 by May 21st.

COMMUNICATION TECHNOLOGY Story on page 15 **Application of a switched 230.4 kilobit data transmission system** for revenue accounting. R.F. Horta and F. C. Doell, Pacific Telephone Co., San Francisco.

May 15, Wed. 8 PM, Pacific Telephone Auditorium, 140 New Montgomery St., SF. Cocktails: 5:45; Dinner 6:15 pm, Ritz Old Poodle Dog Restaurant, 65 Post St., SF. Reservations: Milt Seymour, 593-8491 or Geo. Griffith, 591-8461.

COMPUTER **Speaker and subject to be announced.**

May 28, Tues. 8 PM, Room 134 McCullough Bldg., Stanford. Dinner: 6:15, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Order from menu. Reservations: Merilee Ressel, 321-3300 ext. 451 by noon May 27th.

ELECTROMAGNETIC COMPATIBILITY Story on page 14 **New spectrum analyzer for EMI measurements.** Brian Unter, project leader in signal analysis section, Hewlett-Packard Co., Palo Alto.

May 20, Mon. 8 PM, Hewlett-Packard Auditorium, Microwave Building, 1501 Page Mill Rd., Palo Alto. Dinner: 6 pm, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Order from menu. Reservations: Rod Carlson, 326-7000 ext. 2133 by noon May 20th.

ENGINEERING MANAGEMENT Story on page 4 **Continuing of formal education.** Second of three series on Engineering Management Training. Gary Williams, Stanford School of Business.

May 8, Wed. 8 PM, Lockheed Cafeteria, Sunnyvale. No-host dinner at 6:30 pm, Bold Knight, North Mathilda, Sunnyvale. No reservations required. Order from menu.

ENGINEERING IN MEDICINE & BIOLOGY Story on page 6 **Transfer functions of human biological systems.** Gerald Westheimer, professor of Physiology, U.C. Berkeley.

May 21, Tues. 8 PM, Engineers Club, 160 Sansome St., San Francisco. Dinner: 6:30 pm at Engineers Club. Reservations: 421-3184 by May 20th.

INFORMATION THEORY Story on page 15

A survey of synchronizable code for the noiseless channel. Robert A. Scholtz, assistant professor, University of Southern California.

May 16, Thurs. 8:30 PM, SRI Main Conference Room, 333 Ravenswood Ave., Menlo Park. Dinner: 6:30 pm, L'Auberge French Restaurant, El Camino, Menlo Park. Reservations: R. Bingham, 321-3300 ext. 453 by May 15th. Order from menu.

MAGNETICS Story on page 8

Magnetic tape recording: A review of theory and of outstanding practical achievements. John C. Mallinson, AMPEX Corp., Redwood City.

May 14, Tues. 8:30 PM, SRI Building 1, Conference Room A, 333 Ravenswood Ave., Menlo Park. No dinner.

NUCLEAR SCIENCE Story on page 15

Wine tasting party at Concannon Vineyards. ½ mile east on Tesla Road from end of South Livermore Ave., Livermore.

May 21, Tues. 6:45 PM at Concannon Vineyards. Dinner and Talk at 8 pm at Livermore Ranch House, 875 Rincon, Livermore. $3.75 incl. tax & tip. Choice of steak or prawns. Reservations: for wine tasting and/or dinner and talk: Arlene Lenze 837-5311 ext. 700 by May 20th.

PARTS, MATERIALS & PACKAGING Story on page 16

Integrated circuits, photocurrents and Q-switched lasers. Dr. Don McWilliams, project leader, microelectronics center, Lockheed M&S Co., Sunnyvale.

May 28, Tues. 8 PM, Hewlett-Packard Conference Room M in building 5, 1501 Page Mill Road, Palo Alto. No dinner.

POWER Story on page 10

Classroom computers in elementary and secondary education. Fred Binford, Institute for Mathematical Studies in the Social Sciences, Stanford University.

Annual meeting—Ladies Night. (Members are encouraged to bring their ladies as this meeting will be of interest to them.)

May 14, Tues. 7:30 PM, Engineers' Club of San Francisco, 160 Sansome St., S.F. Cocktails: 5:30 pm. Dinner: 6:30 pm. Reservations: Engineers' Club, 421-3184 by May 13th.

RELIABILITY Story on page 13

Reliability physics; Dr. R.G. Stewart, staff scientist, Lockheed Research Lab, Palo Alto.

May 16, Thurs. 8 PM, PH 104, Stanford University. Relax from 5:30-6. Dinner: 6:00 pm, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Reservations: Adeline Fako or Hal Caldwell, 966-3342. Choice of barbeque chicken or steak. $3.00. Reservations by May 14th.

SAN FRANCISCO SECTION Story on page 12

San Francisco Section Annual Meeting. Honoring newly elected Fellows of the Institute, and introducing the 1968-69 officers of the Section.

June 7, Fri., Palo Alto Hills Golf and Country Club, 3000 Alexis Drive, Palo Alto. Cocktails from 6:30 pm, dinner at 8 pm and dancing until after midnight. Music by Jack Fisher and his orchestra. Tickets will be available at $7.50 per person. Dress informal. Make reservations through Section office, 327-6622.

SAN FRANCISCO SECTION/EAST BAY SUBSECTION Story on page 4

What makes IEEE tick. Lynn C. Holmes, Vice President, Institute of Electrical and Electronics Engineers, Inc.

May 7, Tues. 8 PM, Spenger's Fish Grotto, 1919-4th St., Berkeley. Eastshore Freeway to University Ave. turnoff—at the foot of University Ave. on 4th St. just north of the overpass. No-host social hour: 5:45 pm. Dinner: 7:00 pm, $3.75 incl. tax & tip. Roast sirloin of beef or halibut Florentine. Call Section Office (327-6622) for reservation no later than Friday, May 3rd. Please specify your choice of entree.

SANTA CLARA VALLEY SUBSECTION Story on page 13

AC electric automotive drive system. Dean Andrus, FMC Corporation.

May 15, Wed. 7:30 PM, Room E551, University of Santa Clara, Sullivan Engineering Ctr. No Dinner.

SYSTEMS, SCIENCE & CYBERNETICS Story on page 16

The encoding of medical opinion for the planning of medical care systems. Dr. Richard D. Smallwood, associate professor in Dept. of Engineering-Economic Systems, Stanford University. **Election of Officers**

May 20, Mon. 8 PM, Conference Room B, SRI, 333 Ravenswood Ave., Menlo Park. Dinner: 6:00 pm, Dinah's Shack, 4269 El Camino, Palo Alto. Smorgasbord $3.75 incl. tax & tip. Reservations: Margie Hensley 324-4701 by May 17th, 4 pm.

VEHICULAR TECHNOLOGY Story on page 10

Adjacent channel interference in FM communications systems. James R. Glasser, Motorola Communication & Electronics, Inc.

May 20, Mon. 8 PM, The Shadows Restaurant, 213 Second Ave., San Mateo. No-host cocktails: 6 pm. Dinner: 7 pm, $4.50 incl. tax & tip. Reservations: Mrs. Joan Black 349-3111 ext. 220 by noon May 17th.

On the cover

Ampex battery powered VR-3000 high band color videotape recorder and BC-300 monochrome camera combination permits single operator to tape news and sports events for immediate broadcasting. Color videotape recorder and monochrome camera may be used separately for remote or studio applications. Production units of the VR-3000/BC-300 were shown at the National Association of Broadcasters' convention March 31-April 3 in Chicago.

CLOSING THE GENERATION GAP:

102 Future Engineers entered this year's open-competition for outstanding high school students to show their experiments at WESCON. Thirty-three of them have been given the go-ahead for Step 2 in the contest, which will eventually award $3400 in college scholarships. Five FES judges (representing three western states) were darned near overwhelmed with the exceptional quality of the entries. Most noteworthy note: Many of today's straight-A students also turn out to be student government leaders, AND topflight athletes, AND involved in church and community activities.

They don't seem to need Haight-Ashbury at all.

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Joint San Francisco Section/East Bay Subsection Meeting To Feature Lynn C. Holmes, IEEE Vice President

The San Francisco Section is indeed fortunate to have Lynn C. Holmes, Vice President, IEEE, as the Speaker for its Joint Meeting with the East Bay Subsection on Tuesday evening, May 7, 1968, at Spenger's Fish Grotto in Berkeley. A no-host social hour will begin at 5:45 pm, with dinner at 7:00 pm and the meeting at 8:00 pm.

Mr. Holmes' subject will be "What Makes IEEE Tick?" and he will cover the relationships between members, Sections, Regions and the IEEE Board of Directors and will discuss the multi-lateral obligations that exist. He will show how the Section relates to the Region and to the Regional Director and will describe other paths of communication which sometimes are effective. He will try to depict the roles of the Board of Directors and the Executive Committee in contrast to that of the Headquarters Staff.

In addition to his office as Vice President of the Institute, Mr. Holmes is Assistant to the Director, Research and Engineering of the Electronics Division of General Dynamics Corporation, Rochester, New York. He has staff responsibility for the coordination of the company-sponsored research and development program for the Electronics Division.

All members of the Section and particularly those who are serving on Committees and active in Group Chapter affairs are urged to attend this significant meeting. It presents an excellent opportunity to learn more about the workings of our Institute and to improve communications with Headquarters. There will be ample time for questions following the formal presentation.

Due to the importance of this meeting, *reservations will be required* and must be made no later than May 3, 1968. Dinner will be a choice of Roast Sirloin of Beef or Halibut Florentine at $3.75, including tax and tip. To make your reservation, and to specify your choice of entree, call the Section Office, 327-6622. Reservations may also be made by calling Ruth Emerson at 835-8500 in Oakland, Linda Jarrett at (408) 291-4567 in San Jose, or Mary Vilter at 399-4974 in San Francisco.

Lynn C. Holmes
IEEE Vice President

Second Management Training Series Meeting Features Williams on Transition to Management.

The Engineering Management Chapter will meet for the second meeting of their three part series on management training in the Lockheed Cafeteria in Sunnyvale at 8:30 pm on Wednesday, May 8th. Dinner will be at the Bold Knight at 6:30. No reservations required.

The speaker will be Gary Williams, Associate Director of the Stanford School of Business. He is also a director of the Sloan Fellowship program. Mr. Williams will discuss the continuing of formal education for engineers making the transition to management.

The panel of five who discussed training needed by the engineer who wishes to become a manager at the April 10 meeting of the Engineering Management Chapter. They are, left to right: Jim Green, Wes Farrand, Bill Brown, and John Ames. Not shown here was the fifth member of the panel, W. Wise.

Hatfield/Eggers to Address Region Six Conference May 20-22

Senator Mark O. Hatfield of Oregon and Dr. Alfred Eggers of NASA (National Aeronautics and Space Administration) will head the list of speakers at the Region Six IEEE (Institute of Electrical and Electronics Engineers) 7th annual Conference, May 20-22 at the Sheraton Motor Inn in Portland, Oregon.

Hatfield

Eggers

Senator Hatfield will address the Conference banquet on Tuesday, May 21; and Dr. Eggers, assistant administrator for policy at NASA, will discuss "Aerospace Technology and Society" at the conference luncheon on Wednesday, May 22.

Theme of this year's Conference is "Electronics Serving Mankind", with the Portland IEEE Section as host.

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Western Electronic Show and Convention is sponsored by Region 6 (represented by the Los Angeles Council and the San Francisco Section) of the Institute of Electrical and Electronics Engineers, and the Western Electronic Manufacturers Association

Wright Huntley to Review Holography For Antennas and Propagation on May 9

Wright Huntley (left), and Dominic DeSimone (right), adjusting pinhole spacial filter preparatory to making a hologram.

Mr. Huntley will discuss the relationship between holography and other electromagnetic techniques such as phased array antennas and superhet receivers which is very strong. The basic processes of holography can be explained in familiar electronics terms. The actual practice of holography is, however, very different due to the wavelength and the detector (the photographic plate). These similarities and differences will be described and some typical holographic techniques will be demonstrated.

Mr. Huntley is heading programs in holography and applications of coherent optics in the Physical Electronics Laboratory at Hewlett-Packard Company. He attended Claremont Men's College where he received the AB degree in Management Engineering, and Stanford University where he was awarded the degree of BS in Electrical Engineering. Graduate study at Stanford was in quantum electronics, optical systems and circuit design. He was on active duty in the Air Force from 1950 to 1954 as technical instructor in airborne radar and electronic warfare. In 1955 he went to the Naval Ordnance Laboratory at Corona, California, where he worked on the development of missile fuze systems. He moved to Stanford Electronics Laboratories, in 1956. In 1961, he organized the laser applications group at Stanford, and managed this program in optical radars, communications and holography.

Mr. Huntley has joined the staff at Hewlett-Packard, currently doing applied research in the uses of coherent optics in instrument applications.

The meeting will be held in the Lockheed Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto at 8:00 pm on Thursday, May 9. Dinner will be at 6:00 pm at Rick's Chalet.

There is also to be an election of officers for 1968-69. See calendar.

IEEE was a good show

Definite majority opinion—IEEE was a very good show, and the business climate is healthy—despite some creative news reporting that inferred the contrary. (Let's face it—you're never going to get a unanimous opinion on anything from 700 exhibitors). New technical program approach met with much favor. Plenty of examples of good exhibitor showmanship on the floor.

Aerospace Mechanisms Symposuim May 23-24 In Pasadena

Dates have been announced for the third annual Aerospace Mechanisms Symposium, which is sponsored by the University of Santa Clara, Jet Propulsion Laboratory of the California Institute of Technology and Lockheed Missiles & Space Co.

The two-day conference is the only symposium on this subjest that is held in the United States. More than 300 engineers, including some from Europe, will be present.

A total of 22 original papers were selected by an eight-man review board for presentation at the meetings, which will be held this year at Jet Propulsion Laboratory in Pasadena on May 23-24. The papers are concerned primarily with mechanisms or mechanisms elements that have been flown on spacecraft.

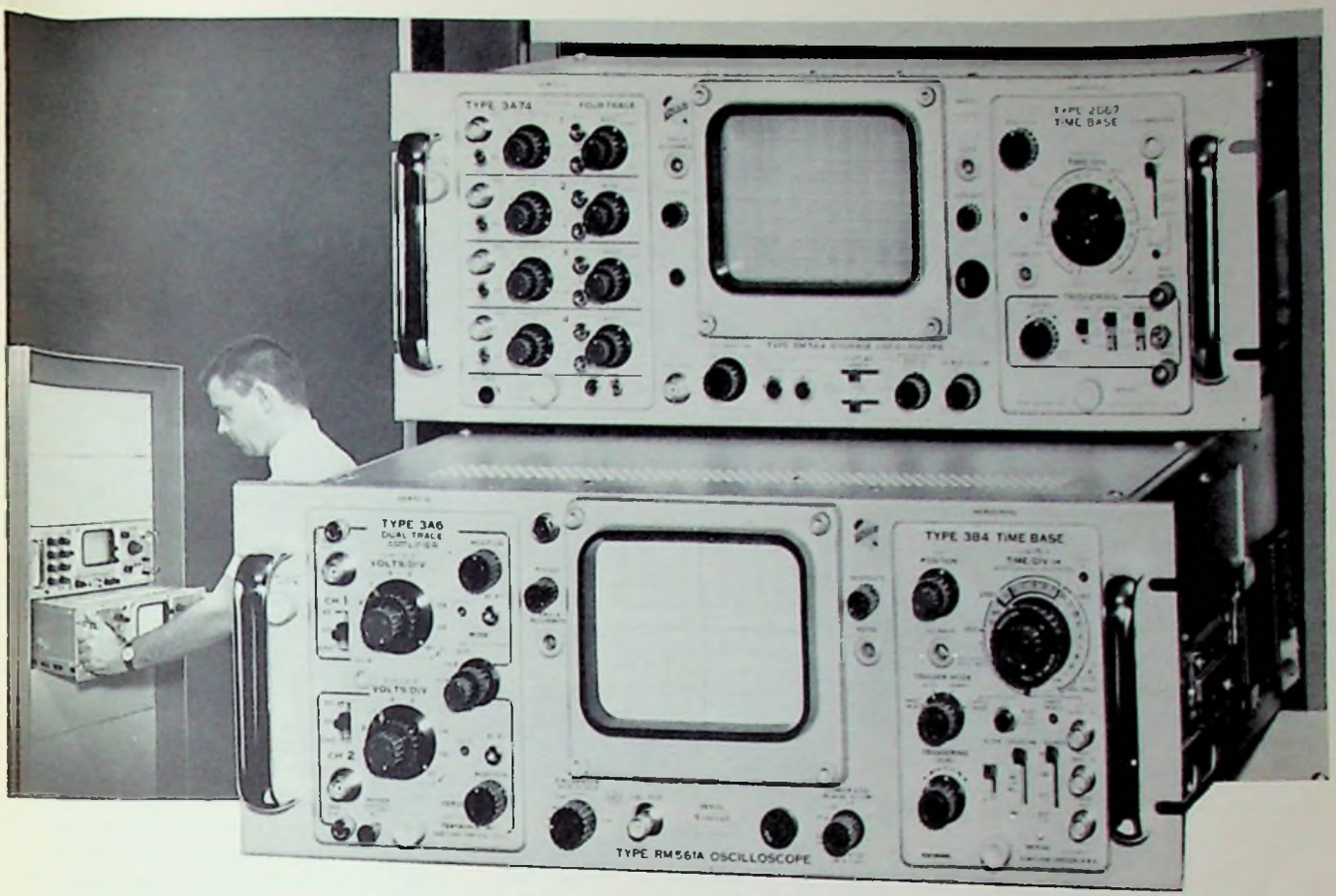
Professor Westheimer to Address EMB on Transfer Function of Human Biological System

Professor Gerald Westheimer (Physiology) U. C. Berkeley, will address the Engineering in Medicine and Biology Chapter on Tuesday, May 21 on The Transfer Functions of Human Biological Systems. The talk will be a survey of the attempts to apply Systems Theory to human physiological function, with particular reference to visual and oculomotor responses. Successes and failures in this field will be analyzed. What are the hopes for the future, particularly as they relate to the interaction of biomedical systems with, or the partial substitution of such systems for, human organs?

Professor Gerald Westheimer has a Bachelor's degree in Mathematics and Physiology, and a Ph.D. in Physics and postdoctoral training in Visual Physiolgy and Neuro-physiology. A past chairman of the Group in Physiological Optics at the University of California, Berkeley, he is now Professor of Physiology at Berkeley. He has over 60 publications in the fields of oculomotor responses, visual physiology and medico-optical instrumentation, has served widely as a consultant to many federal agencies and is on the Board of Editors of *Vision Research*.

The meeting will be held in the Engineers Club in San Francisco at 8 pm. Dinner is to be at 6:30 pm. See calendar.

Westheimer



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Type RM561A Oscilloscope	$ 580
Type RM561A MOD 171A (Includes slide-out tracks)	$ 630
Type 3B4 Time Base	$ 425
Type 3A6 Dual Trace Amplifier	$ 525

The Type RM564 split-screen storage oscilloscope is virtually two instruments in one. It offers all the advantages of a storage oscilloscope plus those of a conventional plug-in oscilloscope. The contrast ratio and brightness of stored displays are constant and independent of viewing time, writing and sweep speeds, and signal repetition rates.

The entire screen or either half can be used for storage and/or conventional displays. In the stored mode, either half of the screen can be erased independently of the other half. A rear panel connector permits remote erasure of either or both halves of the display.

The plug-ins shown in the Type RM564 are the Type 2B67 Time-Base Unit that has calibrated sweep speeds from 5 s/div to 1 μs/div extending to 200 ns/div with the X5 magnifier, and the Type 3A74 Four-Channel Amplifier that provides DC-to-2 MHz bandwidth over its 20 mV/div to 10 V/div calibrated deflection range.

Type RM564 Storage Oscilloscope	$1025
Type RM564 MOD 171A (Includes slide-out tracks)	$1075
Type 2B67 Time-Base	$ 225
Type 3A74 Four-Channel Amplifier	$ 625

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Magnetic Tape Recording - A Review of Theory

John C. Mallinson, Ampex Corp. will review the theory and outstanding practical achievements of magnetic tape recording for the Magnetics chapter at their Tuesday, May 14 meeting.

Following a review of the theories concerning the various physical processes involved in tape recording, the results and implications of some recent successful computer simulations of unbiased recording will be discussed. The problems of extending such calculations to the case of a-c biased recording will be described. In conclusion, an account will be given of the performance of two experimental machines; the first operates down to extremely short (30 micro-inch) wavelengths with normal track widths; the second, by using very narrow tracks (3 milli-inch), attains a digital packing density of well over 106 bits per square inch.

Mallinson

J. C. Mallinson was born in Bradford, England, on January 30, 1932. He received the M. A. degree in natural philosophy (physics) from University College, Oxford, England, in 1953.

Following military service, he joined Amp Inc., Harrisburg, Pa., where he was principally interested in the theory and design of all magnetic logic elements. He is the holder of several issued and pending patents in this field. In 1962 he joined the Corporate Research Division, Ampex Corporation, Redwood City, California, where he is working on the theory of magnetic recording and micro-magnetics. He is a co-author of "Magnetic Properties of Materials", to be published.

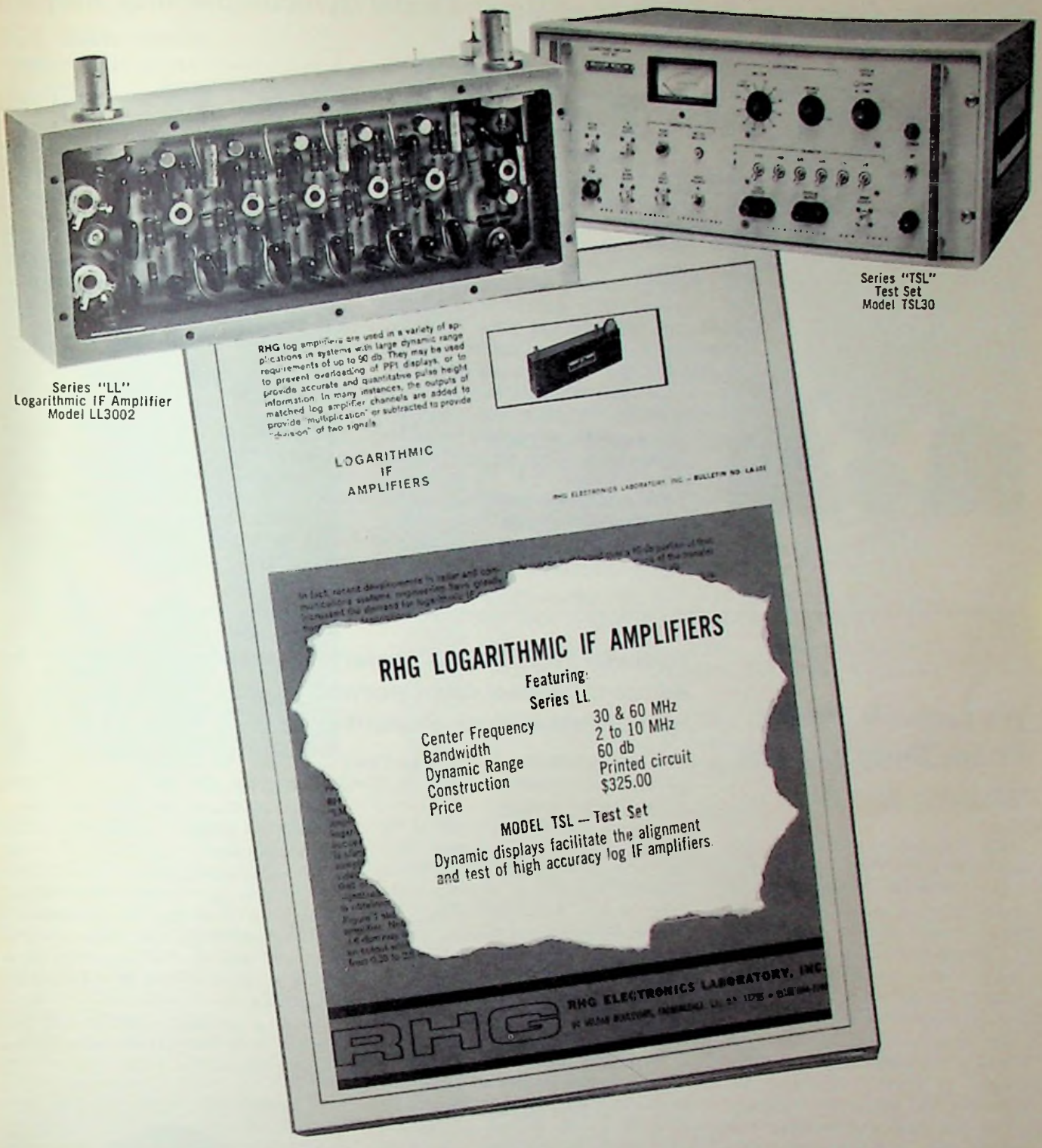
The meeting will be held at Stanford Research Institute in Menlo Park in Building 1, Conference Room A at 8:30 pm. No dinner is planned.

Oliphant Describe to Data on Rock-and-Roll Acoustic Trauma

Mr. Kenward Oliphant will describe to the Audio and Acoustics Chapter certain data obtained in typical "Rock-and-Roll" music halls having little sound absorption as contrasted with other data obtained in conventional symphony halls where symphony music was being played. He will discuss the method of acquisition and draw certain conclusions. He will compare the sound pressure levels observed in various halls with the known damage-risk of hearing loss—"Acoustic trauma."

Mr. Oliphant is an engineering consultant affiliated with Acoustical Consultants, Inc., San Francisco. He obtained his BS physics from University of Oregon in 1943; Stanford Graduate School—Physics in 1946-7.

The meeting will be at 8:00 pm, Thursday, May 16 in conference room B at SRI, 333 Ravenswood Ave., Menlo Park. Dinner is to be at 6:00 pm at the Atherton Club. Reservations required. See calendar.



RHG has pioneered in the manufacture of logarithmic IF amplifiers and Bulletin LA101 describes the complete line, including the "TSL" log amplifier test set. Choose from MIL grade or economy models, with center frequencies to 200 MHz, bandwidths to 100 MHz, and risetimes to 10 nanoseconds...with or without limited IF outputs. Or, contact the Sales Manager for your specialized requirements.

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RHG

RHG ELECTRONICS LABORATORY, INC.

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NEW YORK 11735 (516) 694-3100

Automatic Control to Hear Jack Rodden on Orbital Gyrocompassing May 21

Rodden

Gyrocompassing is a technique for determining azimuth orientation in rotating coordinates. For earth pointing satellites gyrocompassing is used to provide the heading reference through interconnection of gyroscopes and horizon sensors. Many mechanizations of instruments are possible for generating gyrocompass information. These systems include a single gyro, a skewed single gyro with horizon sensor, and a system with a roll and yaw axis gyros and a horizon sensor. Some of the simple mechanizations lead to high gas expenditure and high vehicle angular rates when combined with non-linear controllers. A system of gyro interconnections called decoupling loops are introduced to overcome these performance problems.

The decoupling is advantageous for instrumentation purposes because they make the gyro gimbal angles directly represent the vehicle attitude in the orbital coordinate system. It is concluded that accurate attitude signals for pitch, roll and yaw can be formed with body mounted gyros.

Dr. Rodden is supervisor in the Guidance and Controls Systems department of the Space Systems Division of the Lockheed Missiles & Space Company at Sunnyvale. He is a senior member of the IEEE and of the AIAA. He received his PhD in 1964 from Stanford University. He has published several papers on stabilization and control systems for satellite vehicles, and is coholder of a patent on an attitude control system which uses magnetometer sensors.

The meeting will be held at the University of Santa Clara Engineering Center in room 551 at 8 pm on Tuesday, May 21. There will also be an election of officers. Dinner is to be across the street at LeBoeuf (old Luccas) Restaurant at 6:30. See calendar.

It's Ladies Night for Power Group's Annual Meeting May 14

The final meeting of the 67-68 program year will be held Tuesday, May 14th, 7:30 pm at the Engineers' Club in San Francisco and will be highlighted as the Group's annual "Ladies Night."

Cocktails and dinner will be served and a program which should prove interesting to the ladies as well as to members has been arranged.

Mr. Fred Binford of the Institute for Mathematical Studies in the Social Sciences at Stanford University will speak on the subject of "Computer use in elementary and secondary education". Mr. Binford's current work features computer based instruction in logic for classroom instruction in the Fifth to Eighth grades. He will present a philosophy of teaching founded on computer based instruction in logic and will discuss probable future applications and the role of teachers in automated classrooms.

Mr. Binford is particularly well qualified in his field. He graduated from Guilford College with a "B.Sc." in physics; following this he earned an M.A. in philosophy at Stanford.

He has taught practically all levels from First grade to College with emphasis in the fields of mathematics and physics. He has been with the Institute since 1961. See meeting calendar.

Vehicular Technology Chapter to Hear James Glasser on Adjacent Channel Interference in FM Communications Systems

Mr. James R. Glasser of Motorola Communications and Electronics will address the Vehicular Technology chapter on Monday, May 20 at the Shadows Restaurant in San Mateo at 8:00 pm.

Adjacent channel interference is the primary limitation on the channel spacings and consequently the spectrum utilization that can be obtained in the Land Mobile Radio allocations. To improve spectrum utilization, it has been necessary to reduce channel spacings and modify technical standards in all bands. Today, most systems utilize 5 KHz deviation, but channel spacings and technical standards vary from band to band. This results in a variation in adjacent channel interference protection levels which are at a maximum in the 30 KHz spaced channels in the 150 MHz band, to a minimum in the 15 KHz spaced "tertiary" channels in the same band.

James R. Glasser was born in Gaylord, Michigan, on October 16, 1938. He received the B.S.E. and the M.S.E. degrees in Electrical Engineering from the University of Michigan in 1960, and 1962 respectively.

While completing his studies he was associated with Cooley Electronic Laboratories of Ann Arbor, Michigan. Since 1962, Mr. Glasser has been employed by the Communications Division of Motorola, Incorporated, where he has been responsible for studies concerning interference mechanisms in Two-Way radio systems. He is presently a Group Leader engaged in research on improving communcation radio design techniques.

Mr. Glasser has served as a committee member on Project Co-ordinating Group No. 1 of the Land Mobile Advisory Committee. He holds two patents and has several pending. He is also a member of Tau Beta Pi and Eta Kappa Nu.

No-host cocktails start at 6:00 pm. Dinner is at 7:00. Make reservations. See calendar.

Glasser

Cal L. Thacker Chosen Charter Chairman of New Education Group Chapter

Dean Cal L. Thacker has been elected to be the first Chairman of the newly formed chapter of the Education Group, SF Section.

Thacker

The new chapter has more than 75 Deans and faculty members from 6 Universities, 14 Junior Colleges and technical institutes in the Bay Area.

Other officers are: Vice-Chairman: R. P. Loomba, San Jose State College; Secretary: R. B. Marxheimer, San Francisco State College; Treasurer: J. R. Ward, U.S.N. Postgraduate School; Program Chairman: J. E. Thomsen, Cabrillo College.

Dean Thacker graduated from Cal-Poly in San Louis Obispo and is completing his Master's Work at California Western University in San Diego.

Cogswell College was founded on March 19, 1887 as a co-ed high school and in 1930 the school became a Technical Institute. The school's curriculum is accredited by the Engineering Council for Professional Development.

The College awards Associate in Engineering Degrees in fields of Electronics, Mechanical, and Structural Engineering Technologies.

This is a non-profit, privately endowed Technical Institute, operating as a charitable trust.

Dean Tom Murray of Heald Engineering College was the principal organizer of the SF Chapter on Education.

The first meeting of the new chapter will be held on Saturday, May 4 at 10 am at Rickey's Hyatt House in Palo Alto.

Dr. J. B. Dennis on Future Computer Architecture

At the recent research seminar, held April 15 at Santa Clara University, Dr. J. B. Dennis pointed to two trends in computing which are becoming apparent and foretell a major transformation in the architecture of computer systems. One is the increasing importance of concurrency or parallelism, both as a means of improving hardware utilization through multiprogramming, and as a means of heightening the usability of a computer through "multi-access" operation. The other is "programming generality"—the independence of an algorithm description of the environment in which it is used. Programming generality is the ability to move a program within changing hardware; the ability to use a program in the construction of another—without the need of altering the program description in any way.

Addressing mechanisms and processor scheduling mechanisms appearing in new machines are responses to the demand for parallelism and generality, yet are only hints of greater changes not far away. The future evolution of these innovations is toward replacement of the sequential processor by radically different designs.

MUSIC

FOR THE SAN FRANCISCO SECTION

ANNUAL MEETING

will be by

JACK FISHER

and

SYLVIA GAYLORD

FRIDAY JUNE 7

Known as "Keeper of the Keys", Jack Fisher has been unlocking the latest rhythms with the greatest of please ever since his debut as a boy pianist of twelve. Each individual artist within this talented organization is a star in his own right, but every now and then, everything stops—dancing, wining, dining—and everyone just listens to Jack at the piano.

The evening features a no-host cocktail hour at 6:30 P.M. followed by a Roast Prime Rib of Beef Dinner at 8:00 P.M. and dancing 'til after Midnight. The place is the Palo Alto Hills Golf and Country Club, 3000 Alexis Drive, Palo Alto, Friday, June 7 and tickets are $7.50 per person.

Reliability to Hear Stewart on Impact of Physics on Theory

The impact of physics on the theory of reliability will be presented by Dr. R.G. Stewart of Lockheed Palo Alto Research Laboratory at the May 16 meeting of the Reliability group. The topic "Reliability Physics" will be given at 8:00 pm in Stanford University, Physics 104, following dinner at 6:00 pm at Rick's Swiss Chalet. See calendar.

The widely used, statistically based, foundations of reliability have acted to a certain degree to prevent meaningful utilization of scientific and engineering knowledge as a basis for predicting device and system performance as a function of time and stress. By restructuring some of the basic ideas, such as failure rate, towards the needs of the scientist or engineer rather than a statistician, many new insights and results can be derived. The variability aspect of the problem is not necessarily the most important one when compared with the effect of stress dependent failure mechanisms that may change by many orders of magnitude.

Stewart

Dr. Stewart has been engaged in the Physics of Failure approach to reliability since 1958. At the Lockheed Palo Alto Research Laboratory, he is a member of a group studying failure modes and failure mechanisms in integrated circuits. He has an A.B. and M.S. in Physics from the University of Illinois, and a Ph.D. in Physics from Illinois Institute of Technology. Dr. Stewart worked for Armour Research Foundation (now IIT Research Institute) and Argonne National Laboratory prior to joining Lockheed.

1968 FALL JOINT COMPUTER CONFERENCE

Sponsored by the American Federation of Information Processing Societies, December 9-11, San Francisco. Technical program sessions in Civic Auditorium; industrial and educational exhibits in Brooks Hall; both at San Francisco Civic Center.

For further details, contact Dr. William H. Davidow, General Chairman, 1968 FJCC, 395 Page Mill Road, Palo Alto, California. 94306

WESCON TO TAKE A NEW LOOK AT INDUSTRIAL DESIGN

The Industrial Design Awards program, a longtime WESCON favorite, emerges for 1968 with a brand-new look. Entry materials will start arriving at your companies about April 15. What's so different? Well for one thing, entries will be chosen by category of product—tentative headings include Instruments and Instrumentation, Production and Fabrication Equipment, Computers and EDP, Components, Materials, and Subsystems, and Shelf or Shipment Packaging. There will be winners in all categories.

Dean Andrus Will Describe to SCV Subsection An AC Electric Automotive Drive System

The Santa Clara Valley Subsection will hold a meeting on 15 May at 7:30 in Room E551 of the Sullivan Engineering Center at the University of Santa Clara. The subject of the meeting will be "An A.C. Electric Automobile Drive System."

An A.C. electric drive system presently installed and operating in a tracked vehicle will be presented by Dean C. Andrus, Sr., Electrical Engineer of the Ordnance Division of FMC Corporation, San Jose. This system utilizes two D.C. link frequency converters to provide variable frequency power to the A.C. induction motors driving the tracks. These converters are solid-state units using some of the largest SCR's available for inverter use today. It is the only A.C. system ever applied to a tracked vehicle and problems peculiar to tracks will be presented.

Andrus

Mr. Andrus received his BS degree in electrical engineering from M.I.T. in 1959 and has been with FMC since 1961. Recent projects include the design of automated test equipment for production line testing of electronic assemblies and harnesses, timing and logic circuits for a number of simulated-weapon training devices, and a zip code translator for an automated post office installation. No dinner.

Circuit Theory May Meeting to be Panel on Modern Active Filter Design Techniques

This panel of four will explore modern active filter design techniques at the Wednesday, May 22 Meeting of the Circuit Theory Chapter. The meeting will begin at 8:00 pm in room 134, McCullough Bldg., Stanford Univ. Dinner is called for 6:00 pm at the Red Cottage in Menlo Park. Reservations. See calendar.

Kerwin

Mitra

Rigby

Orchard

Graham A. Rigby was born in Melbourne, Australia on March 31, 1940. He received the B.Sc. (Physics) and M.Sc. (E.E.) degrees from the University of Melbourne in 1961 and 1963, respectively. In 1966 he received the Ph.D. degree from the University of California, Berkeley. He was appointed Assistant Lecturer in Electrical Engineering at the University of Melbourne in 1963, and was appointed Assistant Professor of Electrical Engineering at the University of California, Berkeley in 1966. His research interests were formerly in high speed switching circuits and are currently in linear integrated circuits, with a special interest in selective amplifiers. Dr. Rigby is a member of Sigma Xi and the Institute of Radio and Electronic Engineers.

William J. Kerwin was born in Portage, Wisconsin on September 27, 1922. He received the BS degree in physics in 1948 from the University of Redlands, Redlands, California and the MS-EE and Ph.D. degrees from Stanford University in 1954 and 1967, respectively.

From June 1948 to February 1962 he was a Research Scientist at the Ames Research Center of NASA. From 1948 to 1962 he was chief of the Measurements Research Branch at Ames Research Center, responsible for the development of space satellite and space probe instruments, wind tunnel, shock tube, and ballistic range instrumentation. During 1962 he was associated with the Stanford Linear Accelerator Center as head of the Electronics Department, and in December, 1962, he returned to Ames Research Center as chief of the Space Technology Branch.

Dr. Kerwin is an Associate Fellow of the American Institute of Aeronautics and Astronautics, and a member of Sigma Xi.

Sanjit K. Mitra was born in Calcutta, India on November 26, 1935. He received the B.Sc. (Hons.) degree in physics in 1953 from Utkal University, Cuttack, India, the M.Sc. (Tech.) degree in radio physics and electronics in 1956 from Calcutta University, the M.S. degree in 1960 and the Ph.D. degree in 1962 in electrical engineering from the University of California, Berkeley.

He was with the Bell Telephone Laboratories, Holmdel, N.J., 1965—1967. At present he is an Associate Professor of electrical engineering at U.C. Davis. He is also a consultant to Ampex. In 1967, he was a staff engineer at Lenkurt Electric Co.

Dr. Mitra has published a number of papers in the field of active and passive networks and is the author of a forthcoming book entitled, "Analysis and Synthesis of Linear Active Networks" to be published by John Wiley and Sons, New York, N.Y.

Dr. Mitra is a member of Sigma Xi and Eta Kappa Nu.

Henry J. Orchard was born in England in 1922 and received the degrees of B.Sc. and M.Sc. in mathematics from the University of London in 1946 and 1951 respectively. During World War II he was teaching telecommunications at the Central Training School of the British Post Office Engineering Department. In 1947 he was transferred to their Research Station at Dollis Hill where he was occupied with research into network theory and design. In 1961 he emigrated to the United States and joined Lenkurt Electric Co. in San Carlos, Calif. as a consultant in network design. Presently he is in the Advanced Development department in charge of circuit research and scientific computing.

Brian Unter on New Spectrum Analyzer for EMI Measurements at EMC Meeting

Mr. Brian Unter of the Hewlett-Packard Microwave Laboratory will discuss a recently developed RF Spectrum Analyzer and its application to RFI/EMC measurements at the May 20 meeting of the Electromagnetic Compatibility Chapter.

EMI measurements made with manually-tuned receivers are inherently slow and rather restrictive in viewing an interference signal spectrum. The advantage of using a spectrum analyzer in EMI work is the immediate wide frequency range spectral display, which is very useful in identifying the type of interference signal present. Signals including CW, modulated CW, pulsed RF and impulse noise signals are easily identified by their spectral signature.

Unter

Brian Unter is a Project Leader in the Signal Analysis Section of the Hewlett-Packard Microwave Laboratory. This section is concerned with the development of spectrum analyzers, broadband detectors, and power meters. He is a graduate of the University of Wisconsin where he received his BS and MS degrees in Electrical Engineering. He is a member of IEEE, Tau Beta Pi, Eta Kappa Nu, and Kappa Eta Kappa. Prior to joining HP in 1965, he was a half-time instructor and graduate researcher for Wisconsin's weather satellite program.

The meeting will be at 8:00 pm in the Hewlett-Packard Auditorium. Dinner has been arranged at Rick's Swiss Chalet at 6:00 pm. Reservations—see calendar.

Synchronizable Code for the Noiseless Channel To be Surveyed for IT Chapter by Robert Scholtz

Dr. Robert A. Scholtz, Assistant Professor USC will address the Information Theory Chapter on Thursday, May 16. His subject will be "A Survey of Synchronizable Code for the Noiseless Channel".

A synchronizable code has been studied for less than a decade by communication theorists. After a historical and tutorial review of a handful of significant papers, Dr. Scholtz will discuss unifying aspects of the theory and present further unpublished results. A new algorithm for constructing comma-free dictionaries of maximal size will be presented and the concept of a variable word length comma-free code will be developed.

Dr. Scholtz received his Ph.D. from Stanford University in 1964 and is currently an Assistant Professor in the Department of Electrical Engineering at University of Southern California.

The meeting will be held in the SRI main conference room at 8:30 pm. Dinner is to be at L'Auberge French Restaurant at 6:30 pm. See calendar.

Com Tech to Hear Horta & Doell On Revenue Data Transmission System.

At the Wednesday, May 15 meeting of the ComTech Chapter Mr. R.F. Horta and Mr. F.C. Doell will discuss engineering aspects of the 230.4 kilobit switched data system developed for the Pacific Telephone Revenue Accounting Department. Mr. Horta will discuss the transmission aspects of the system and its relation to Data Net 50, which is covered by FCC tariffs. Mr. Doell will discuss noise and error performance of the system; he will describe some solutions to the noise problems encountered on T carrier portions of the circuit.

This data system is the first of its kind that can operate up to 250 kilobits. Switching of the data connections is accomplished at T carrier frequency. Selection of a connection between any two of the nine revenue accounting centers is accomplished by dialing the connection from any of the data terminals.

At 9:00 pm following the discussion, there will be an inspection tour through the San Francisco Revenue Accounting Center which is equipped with a 230.4 kilobit data station working with an IBM 2701 Line Adaptor and a 360-30 type Computer.

Mr. Horta received his B.S. degree in Electrical Engineering from the University of California at Berkeley in 1941. He attended the Bell System Data Communications Course at Cooperstown, New York in 1962. Presently he is responsible for transmission design of wideband data systems of Pacific Telephone Company in the bay area.

Mr. Doell received his B.S. degree in Electrical Engineering at the University of Washington in Seattle in 1962. He attended the Bell System Data Communications Course at Cooperstown, New York in 1967. Presently he is responsible for noise, crosstalk, and protection aspects of voice frequency carrier and data systems of the Pacific Telephone Company in the bay area.

Dinner will be at the Ritz Old Poodle Dog Restaurant at 6:15 pm (Cocktails 5:45 pm). See calendar.

It's WINE TASTING for the Nuclear Science May 21 Meeting

The May meeting of the Nuclear Science Group will be primarily a social event. Members, potential members, their wives, and friends are all invited to a tasting of premium red and white wines provided by Concannon Winery at their winery in Livermore. A variety of cheeses and bread complimenting the wines will also be served. Following the wine-tasting, the group will have dinner at the Livermore Ranch House.

After the dinner Mr. Ted Hamm of the Diagnostics Systems Division of Lawrence Radiation Laboratory at Livermore will discuss the findings of a survey party that examined 3,000 square miles of Alaskan terrain for use as future test sites. Some of the engineering problems that can be anticipated in this environment will be outlined. This presentation will also include many colored slides that reveal the indigenous animal life and Eskimo culture.

The results of the election of the officers for the coming year will be announced. See calendar.

Commerce Secretary Smith Headline WESCON Speaker

Secretary of Commerce C. R. Smith will deliver the keynote address of WESCON week at a Sponsors Luncheon of the WESCON board of directors.

Secretary Smith received his cabinet appointment last March, after a 30-year career as a world leader in aviation. He has served as president and later board chairman of American Airlines since 1934, except for a three-year period during World War II. During the war, he was a major general and Deputy Commander of the Air Transport System, and was highly instrumental in building the U.S. Army global transport system.

AES June Meeting to be Annual Barbeque Steak Dinner and Wine Tasting

The Aerospace and Electronic Systems Chapter will enjoy their annual barbeque steak dinner with wine tasting at the Paul Masson winery on Wednesday, June 5. The steaks will be choice New York State cuts barbequed before your very eyes at the winery. Paul Masson will supply all the wines for the wine tasting, as well as the table wines for the dinner. Since an accurate count of attendance is necessary, please mail your check for $4.75 per person not later than May 20 to Al Hastings, 3940 Grove Ave., Palo Alto, California 94303.

SSC to Hear Richard Smallwood on Encoding of Medical Opinion for the Planning of Medical Care Systems

Last summer the Stanford Facilities Medical Group was formed to carry out a systems planning study for the design of the new Stanford Medical School Patient Care Facilities. This talk will describe some of the results of our preliminary problem formulation for the project as well as some of the more recent studies that are currently in progress.

Smallwood

In particular one very critical component of the planning project is a model that describes the patient care demand upon the medical facilities. This model will be discussed and special attention will be given to the computer dialog system that has been developed to obtain the necessary medical data from practicing physicians for fixing the elements of the model. Some initial experiences and results in using this dialog system will also be presented.

Richard D. Smallwood's professional interests include: large scale system planning (especially medical care systems), mathematical modeling, decision analysis, and man-machine systems. He received his S.B. in 1957, his S.M. in 1959, and his Sc.D. in 1962 in Electrical Engineering from the Massachusetts Institute of Technology. He is currently affiliated with Bolt, Beranek and Newman Company and with the Stanford Research Institute as a consultant. In 1964 he joined the faculty at Stanford University and is currently as Associate Professor in the Department of Engineering-Economic Systems and the Department of Electrical Engineering.

Elections will also be held at this meeting. Any suggestions should be phoned to Hugh Mays at 321-7250. The meeting will be held Monday, May 20 at SRI in conference room B, 8 pm. Dinner will be at Dinah's Shack at 6 pm. See calendar.

PMP Chapter to Hear Don McWilliams on Dielectric Isolated Integrated Circuits

Dr. Don McWilliams, Project leader, Microelectronics Center, Lockheed Missiles and Space Company, Sunnyvale, will address the Parts, Materials and Packaging Group on Tuesday, May 28 at 8:00 pm on the subject: Integrated Circuits, Photocurrents and Q-Switched Lasers. The meeting will be held at Hewlett-Packard Co.'s conference room "M" in building 5.

The talk will cover photon-integrated circuit interaction which is a complex electronic equipment problem. A realistic appraisal of possible current contributions due to hole-electron pairs generated in or near semiconductor junctions as an important part of circuit design in advanced equipment will also be covered. The manner in which dielectric isolation construction techniques can improve the ability to predict circuit response and minimize photocurrent will be shown. Included will be a discussion on the Q-switched neodymium laser as a flexible tool which can greatly ease the difficulty of testing and qualifying new circuits. With certain limitations due to dosimetry, it can provide the most effective way for nondestructive testing of volume production integrated circuits.

Dr. McWilliams received his Ph.D. in Physics from Iowa State University in 1962. Prior associations have been with North American Autonetics Division in the Solid State Devices Laboratory and in the Microelectronics Center at TRW Systems.

1968 REGION SIX CONFERENCE
May 20, 21, 22, Portland, Oregon
SHERATON PORTLAND MOTOR INN
May 20, 10:00 AM — 12:00 Noon

OPENING KEYNOTE PANEL

"THE IMPACT OF TECHNOLOGY ON MANKIND"

Moderator: Walter P. Dyke, Field Emission Corporation

Panelists: John M. Brookhart, University of Oregon Medical School
Walter H. Brattain, Whitman College
Guilford L. Hollingsworth, Boeing Scientific Research Labs.
Otto H. Schmitt, University of Minnesota

May 20, 1:45 PM — 5:00 PM

SIMULTANEOUS SESSIONS

OCEANOGRAPHY

Keynote Address:
"Oceanography and Electronics"
Stephen J. Neshyba
Oregon State University

Technical Papers:
"Oceanography at a Glance"
Alyn C. Duxbury
University of Washington

"Oceans Without Megohms"
John D. Isaacs
Scripps Institute of Oceanography

"Microscale Phenomena in the Ocean and Atmospheric Boundary Layer"
Stephen Pond
Oregon State University

"Measurement Required for Theoretical and Numerical Simulation of Mesoscale Oceanic Motions"
James J. O'Brien
National Center for Atmospheric Research

"Synoptic Analysis of Global Scale Ocean Parameters"
Peter R. Tatro
Fleet Numerical Weather Facility

ENERGY SOURCES

Keynote Address:
"Energy Sources of the Future With Emphasis on the Light Elements"
James L. Tuck
Los Alamos Scientific Laboratory

Technical Papers:
"A Snapshot of Fusion Power Research"
Ralph W. Kilb
General Electric Company

"Recent Developments in Electro-Chemical Battery Power Sources"
Morris Eisenberg
Electrochemical Corporation

"Nuclear Power in the Northwest"
Donald J. Broehl
Portland General Electric Co.

"The Centralia Fossil Fueled Steam Electric Plant"
E. R. deLuccia, et al.
Pacific Power and Light Co.

May 21, 8:45 — 12:00 Noon

SIMULTANEOUS SESSIONS

TRANSPORTATION

Keynote Address:
"The Future of Transportation Technology"
Richard C. Dorf
University of Santa Clara

Technical Papers:
"Modeling and Simulation of a Logistical Transportation System"
Marlin H. Mickle, et al.
University of Pittsburgh

"Traffic Signal Timing by Means of an Adaptive Controller of Traffic (ACT) System"
Donlan F. Jones
Sylvania Electric Systems

"The Application of Electronics Technology to the Bay Area Rapid Transit District System"
D. N. Aboudara
Bay Area Rapid Transit District

COMPUTER

Keynote Address:
"Computer Technology — Past, Present and Future"
John A. Harr
Bell Laboratories

Technical Papers:
"Meta-Assembly Made Easy"
Myron A. Calhoun
Fairchild Semiconductor R.&D. Lab.

"The Stenomark Reader: A New Approach to Man-Machine-Man Communication"
Scott R. Gilpin, et al.
IBM Corporation

"The Potential Use of Fingerprint Identification Systems in the Automated Society"
John E. Gaffney, Jr., et al.
IBM Corporation

"The Computer and I"
Wayne E. Garber
General Electric Company

May 21, 1:45 PM — 5:00 PM

SIMULTANEOUS SESSIONS

BIOSCIENCE

Keynote Address:
"Bioengineering Principles Applied to the Development of Bioengineering Science"
Otto H. Schmitt
University of Minnesota

Technical Papers:
"A Flexible Data Acquisition and Formating System for Digital Computers with Biomedical Applications"
Walter A. Peterson, Jr.
University of Oregon Medical School

"A Summary of the Ear as an Analyzer of Sound"
Victor W. Bolie
Oklahoma State University

"Recent Improvements in the Application of Image Intensifiers to Radionuclide Imaging in Nuclear Medicine"
William H. Beierwaltes, et al.
University of Michigan Medical Center

"Magnetic Video Recording in Medicine"
Joseph Roizen
Ampex International Corporation

AEROSPACE

Keynote Address:
"Electronics in Aerospace"
Guilford L. Hollingsworth
Boeing Scientific Research Labs.

Technical Papers:
"Laser Aiming Simulation (LASIM)"
R. L. Dobson
IBM Corporation

"Evaluation of the Multipurpose Concept for Earth Application Satellites"
Jay J. Karlin
General Electric Co.

"The Use of Flight Simulation in the Supersonic Transport Development"
David Leisey
The Boeing Company

"An Aeromedical Electronic Stethoscope"
J. A. Mastropaolo
Douglas Aircraft Division

May 22, 8:45 AM — 11:45 AM

SIMULTANEOUS SESSIONS

COMMUNICATIONS

Keynote Address:
"Communications in the Service of Mankind"
Julian D. Tebo
Bell Telephone Laboratories

Technical Papers:
"High-Power Wideband TWT Power Amplifier Systems"
Louis L. Fisher
Alto Scientific Company, Inc.

"The Navy's World Wide Communication System"
John J. Weigel
Naval Communication Station

"Design Concepts for Communications for the Fast Flux Facility"
Roy C. Hoffman
Douglas United Nuclear, Inc.

"The Land Mobile Spectrum Crisis"
David C. Pinkerton
General Electric Company

EDUCATION

Keynote Address:
"What Part has Electricity Played in Education?"
George W. Gleeson
Oregon State University

Technical Papers:
"Educational Technology"
Richard C. Dorf
University of Santa Clara

"Television's New Role in Education"
Richard H. Bell
Ampex Corporation

"Whither Computer-Science Education"
Louis N. Stone
Oregon State University

"The Role of Television & Computers in Engineering"
John Wentworth
Radio Corporation of America

May 22, 2:30 PM — 5:30 PM

SIMULTANEOUS SESSIONS

LASERS

Keynote Address:
"Non-Military Applications of Lasers"
Narinder S. Kapany
Optics Technology, Inc.

Technical Papers:
"On the State of the Art of the Laser — A New Tool Seen in a Practical Light"
Viktor Met
Electro Optics Associates

"Practical Applications of Visible Output CW Gas Lasers"
Robert Mortensen
Spectra-Physics, Inc.

"Improved Laser Extensometer"
William J. Coleman
Battelle Northwest

"Laser Interferometer Earth Strain Measurements"
Victor Vali
Boeing Scientific Research Labs.

SIMULATION

Keynote Address:
"A Little Simulation — And How It Grew"
John H. McLeod
Simulations Councils, Inc.

Technical Papers:
"Simulation of a Computer Central"
James E. Herrick
Service Technology Corporation

"Plutonium Inhalation Model Simulates the Long-Term Burden of the Deep Lung and Systemic Organs"
Paul J. Dionne, et al.
Pacific Northwest Laboratory

"Monte Carlo Simulation of System Reliability"
Thomas L. Fagan, et al.
General Electric Company

"Analog Computer Simulation of Hemolysis Kinetics"
Robert E. Swanson
University of Oregon Medical School

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Chairman

WILLIAM D. WALKER
Vice Chairman

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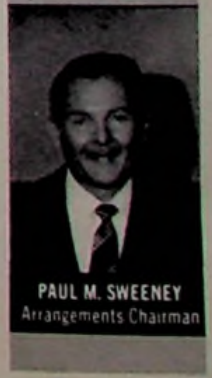
Program Chairman



PAUL M. SWEENEY
Arrangements Chairman

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Tours ..... James G. Miller
Student Papers ..... Warren Collier
Ladies Activities .... Mrs. Lu Walker

SPECIAL EVENTS:

Banquet: May 21, 7:00 PM—9:00 PM
Speaker: Senator Mark O. Hatfield, "What is Man?"

Luncheon: May 22, 12:00 Noon—2:15 PM
Speaker: Dr. Alfred J. Eggers, "Aerospace Technology and Society"

OTHER ACTIVITIES:

Sunday May 19: Steam Train Ride and Barbecue
Monday May 20: Tour Rodgers Organ Co., Ladies City Tour
Tuesday May 21: Tour Tektronix, Inc., Ladies Brunch and Harbor Tour
Wednesday May 22: Tour Oregon Primate Research Center, Ladies Mt. Hood Trip
Thursday May 23: Tour The Dalles Dam and Extra High Voltage Laboratory

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Carl P. Hollstein, Jr., received his B.S. and M.S. degrees in electrical engineering from the State University of New York at Buffalo in 1961 and 1964.

He joined IBM in 1964 at San Jose, California. His first assignment involved designing data acquisition amplifiers for process control systems. This was followed by advanced circuit design for the disk file area.

Mr. Hollstein is a member of the IEEE Santa Clara Valley Subsection. He served as Secretary-Treasurer for this group during the 1966-67 term, and as Vice-Chairman during the 1967-68 term.

S.H. Marx received a B.E.E. degree from the Polytechnic Institute of Brooklyn, and an M.S.E.E. from Columbia University.

Mr. Marx has been with the Philco SRS/WDL Divisions since 1962. He organized the electro-mechanical equipment activity and the inertial laboratory in the SRS Division Guidance and Control Department. He has been responsible for the design of a dither type scan, and for the analysis, design and testing of a variety of damping systems for use in passive stabilization systems;

Marvin B. Rudin received his BSEE from the California Institute of Technology in 1949 and his MSEE from CIT in 1951.

He has written papers on integrated circuits, telemetry multiplexing, modulation, and synchronization, and on microwave stabilized oscillators for radar applications.

Since January 1966, he has been Manager of Linear Integrated Circuits (LIC) at Fairchild Semiconductor Research and Development Labratory, where he directs circuit and system research and development in LIC's.

Lewis B. Steward received most of his formal engineering education from San Jose State College and Santa Clara University. He served with the USMC 1942/43.

At present he is a senior staff scientist with ITT Jennings Radio in San Jose. He has held various positions with Jennings—from Design Engineer to Vice President, Director of Engineering. He has been an active amateur radio operator since 1933 and is responsible for nine patents granted on Jennings products.

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AA degree from Hartnell Junior College. While attending University of California at Berkeley, he assisted in research on Stress-Strain Analysis of Bridge Construction. Has worked for Pacific Telephone and Telegraph Company since 1952 in Communications Transmission Design. Currently heads up the Transmission Quality group for Central Counties Area. He has served on the Membership Committee IEEE/San Francisco Section, Coordinated IEEE booth at Computer Conference in San Francisco, served as Secretary of East Bay Subsection and is currently Vice Chairman of the East Bay Subsection.

VICE CHAIRMAN

Theodore Hamm, Jr.—IEEE Member

Ted Hamm was graduated from the University of California at Berkeley in 1957 with the BSEE degree. He has been associated with the Lawrence Radiation Laboratory for the past ten years and currently is a Project Group Leader in the EE Department at the Lawrence Radiation Laboratory in Livermore. He is a past Program Chairman, Secretary-Treasurer and Vice Chairman of the East Bay Subsection of IEEE (IRE). He is currently Secretary of the East Bay Subsection.

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J.L. Cattolica—IEEE Senior Member

Graduate of the University of California with a B.S. degree in Electrical Engineering. He joined the Pacific Gas and Electric Company in 1937, and worked with the Construction Department. He later transferred to the Engineering Department as an Electrical Engineer, holding various positions in the Engineering and Operations Department. His present position is District Electric Superintendent, East Bay Division. Mr. Cattolica was an Electronics Officer in World War II. He has worked on several committees for the East Bay Subsection, was Program Chairman in 1964 and Arrangements Chairman in 1965 and Treasurer in 1967.

Robert B. Nannizzi—IEEE Member

Mr. Nannizzi graduated from the University of California in Berkeley in 1963 with a B.S. degree in Electrical Engineering. After graduation he worked for Lockheed Missiles and Space Company for two years. In 1965, he joined Bechtel Corporation as a Power Systems Engineer. He has been an IEEE member since 1962, served on the Membership Committee in 1966 and is currently Publicity Chairman for the East Bay Subsection.

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Mr. Doell graduated from the University of Washington in 1962 with a B.S. degree in Electrical Engineering. He is currently employed by Pacific Telephone and Telegraph Company as an Engineer in the Chief Engineer's Protection group. Mr. Doell is Subchairman of the San Francisco Section Membership Committee and has been Chairman for the East Bay Subsection for the past two years.

Lewis L. Neubacher—IEEE Senior Member

Mr. Neubacher is a graduate of Purdue University with a BSEE degree. He is a registered professional engineer in the state of California. He was employed by Pacific Gas and Electric Company in 1931 in the Valuation Department. Subsequently he served as District Planning Engineer, Division Senior Substation Engineer and currently as Division Senior Distribution Engineer in Oakland. At present he is Arrangements Chairman of the East Bay Subsection of IEEE.

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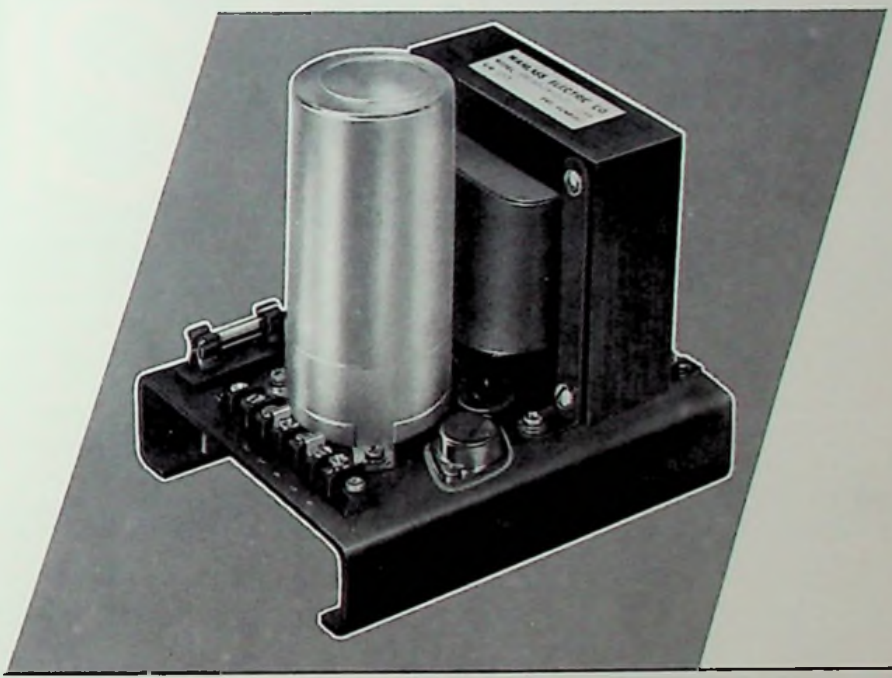

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