EDITOR'S PROFILE of this issue

from a historical perspective …

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

February 1973:

Cover: Shown are our six new IEEE Fellows. Details on page 4.

p. 8: George White, of the Speech Recognition Group at Xerox PARC, talks about digital speech. This is also being developed at the Stanford Research Institute (SRI), eventually as its CALO project (funded by DARPA), where several SRI employees (Dag Kittlaus, Adam Cheyer, Norman Winarsky) leave to form SIRI, Inc. Later bought by Apple Computer, this becomes the basis for the Siri speech-recognition assistant.

Archive of available SF Bay Area GRID Magazines is at this location:
https://ethw.org/IEEE_San_Francisco_Bay_Area_Council_History

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

Grid

FEBRUARY 1973

FELLOWS ELECTED - 1973

BERTRAM A. AULD

For contributions to the theory of microwave ferrite devices and microwave acoustics.

ARTHUR M. HOPKIN

For contributions to nonlinear control systems and engineering education.

EDWARD M. T. JONES

For contributions in the analysis and development of radio frequency circuit components and radiating structures.

ROBERT E. LARSON

For contributions in the application of modern control and estimation theory and algorithms to defense and industrial problems.

HERBERT J. SHAW

For contributions to the field of microwave acoustics.

GERD D. WALLENSTEIN

For pioneering leadership in planning and implementating worldwide telecommunications.

Grid

volume 19
number 4

February 1973

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Suite 2210, 701 Welch Road
Palo Alto, California 94304
Telephone: (415) 327-6622

Jean Helmke, Office Manager

1972-73 San Francisco Section Officers
Chairman: Charles A. Eldon
Vice Chairman: Dalton W. Martin
Secretary: E. D. Jackson
Treasurer: R. J. Whittier

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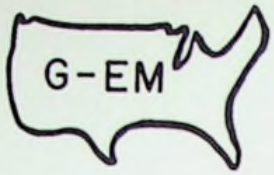
EM – WANT TO BE RICH?

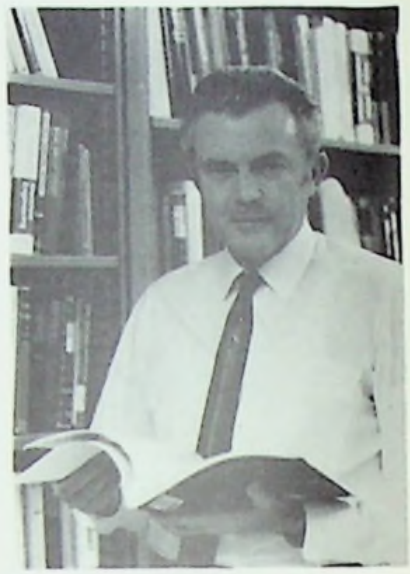


DO YOU SINCERELY WANT TO BE RICH? If you answer an eager affirmative, you are likely to LOSE money in the stock market, according to our speaker at the February PG–EM meeting.

Peter Hall is a stockbroker who says he is not just a stockbroker. Not only does he sell a fair amount of bonds, but he also handles commodities, mutual funds, and tax shelter investments, dealing with numerous investment counselors. He is also a schoolteacher of sorts lecturing graduate investment seminars at Stanford and Golden Gate College. Peter is particularly intrigued by the growing high technology companies which spring up hereabouts. His talk will focus on how to weigh the risks and rewards of investing in technology stocks.

Mr. Hall's background may give him some insight into high technology companies. After an MBA with distinction from the University of Michigan, and a stint as a Navy Pilot during the Korean war, he worked for both Lockheed and Philco in financial management. He has been a management consultant with the prestigious firm of McKinsey & Co., where he participated in studies for several major aerospace contractors. Peter's current responsibilities include investment banking and merger-acquisition work for his firm, Bache & Co., Inc. in the Palo Alto office.

PROFESSOR JOHN WHINNERY ELECTED TO NATIONAL ACADEMY OF SCIENCES



John R. Whinnery, (A'41-SM'44-F'48) Professor of ECSS at UC Berkeley, recently was elected to the National Academy of Sciences, one of the highest honors that can be bestowed on an American scientist or engineer. Dr. Whinnery received his PhD at Berkeley in 1948, and later served in advancing capacities, including that of Dean of the College of Engineering. He received the IEEE Education Medal in 1967, and served as IEEE national secretary in 1971.

THE EDITOR'S UNEASY CHAIR

Thanks from the editor for cooperation in sending February GRID copy early to meet demands of holiday mail, and the closure of the office to give Jean Helmke a well deserved vacation. Your assistance also is requested for the March issue. The editor is required to attend the Winter Power Meeting Jan. 28-Febr. 2. He will return Friday noon Febr. 2 to a stack of copy for both the March GRID and PES Newsletters. Good, short, clear copy (like you have been presenting), requiring minimum editing, in the office before Jan. 31, would please both of us.

E. W. Morris

1973-1974 SECTION NOMINEES

For Chairman: Dalton W. Martin
Vice President, VIDAR Corporation.

For Vice Chairman: Ed Jackson
Staff Engineer, Pacific Telephone & Telegraph Co.

For Secretary: Ronald J. Whittier
Intel Corporation

For Treasurer: Richard Anderson
Division Manager, Hewlitt-Packard, Sunnyvale.

For Treasurer: Jack Shulman
District Engineer, Westinghouse Electric Corporation.

For WESCON Director: L. G. Fitzsimmons, Pacific Telephone & Telegraph Company

Photographs and biographies will appear in the April GRID, along with the ballots.

MEETING CALENDAR

AUDIO & ELECTROACOUSTICS
FEBRUARY 8
Story on page 8

DIGITAL SPEECH RECOGNITION IN REAL TIME. Dr. George White, Xerox Research Center, Palo Alto.

FEBRUARY 8, Thursday, 8:00 PM, Xerox Research Center, 3406 Hillview Ave., Palo Alto. No dinner.

ANTENNAS & PROPAGATION
FEBRUARY 10
Story on page 6

One day short course **NUMERICAL METHODS IN ELECTROMAGNETICS.** Dr. Frank B. Harris, TCI, Dr. Thomas N. C. Wang, SRI, Dr. Anthony G. Jennetti, ESL and Dr. Edmund K. Miller, LLL.

FEBRUARY 10, Saturday, 8:30 AM - 4:00 PM, Lockheed Research Laboratory Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto. Registration $15.00. Further information: Dr. Frank Harris, (415) 961-9180.

COMMUNICATIONS SOCIETY/AEROSPACE & ELECTRONIC SYSTEMS/ELECTROMAGNETIC COMPATIBILITY
FEBRUARY 22
Story on page 5

THE QUEST FOR MILLION-VOICE-CHANNEL LONG HAUL TRANSMISSION SYSTEMS. JOINT MEETING. C. Louis Cuccia, Philco Ford Corp., Palo Alto.

FEBRUARY 22, Thursday, 8:00 PM, Hewlett-Packard Auditorium, 5301 Stevens Creek Blvd. at Lawrence Expressway, Santa Clara. Dinner: 6:30 PM, The Customhouse, 20060 Stevens Creek Blvd., Cupertino. Reservations: Pat Hoppe, (415) 326-4350 x 6142 by February 20th.

COMPUTER SOCIETY
MARCH 1

MINICOMPUTER SYSTEMS FOR PATIENT CARE. S. S. Yau, Professor of Computer Sciences, Northwestern University.

MARCH 1, Thursday 8:00 PM, Skilling Auditorium, Stanford University. Dinner: Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto at 6:15 PM. Reservations: Neil Sullivan (408) 257-6550 x 320 by noon, March 1.

CONTROL SYSTEMS SOCIETY
FEBRUARY 28
Story on page 8

SOME RESULTS IN LINEAR DISCRETE TIME ESTIMATION. Prof. Thomas Kailath, Director of Information Systems Laboratory, Stanford University.

FEBRUARY 18, Wednesday, 8:00 PM, Conference Room B, SRI, 333 Ravenswood Ave., Menlo Park. No dinner. Refreshments at meeting.

ELECTRON DEVICES
FEBRUARY 20
Story on page 5

SOLID STATE MICROWAVE AMPLIFIERS. DIODES vs. TRANSISTORS. Harry Cooke, Avantek, Inc., Santa Clara and W. Keith Kennedy, Watkins-Johnson Co., Palo Alto.

FEBRUARY 20, Tuesday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Cocktails at 6:00 PM, dinner at 7:00 PM. Reservations: Section Office (415) 327-6622.

ENGINEERING MANAGEMENT
FEBRUARY 20
Story on page 2

INVESTMENT IN HIGH TECHNOLOGY COMPANIES. Peter Tyler Hall, Bache & Co., Inc.

FEBRUARY 20, Tuesday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Cocktails: (no host) 6:00 PM, dinner 6:30 PM. For dinner reservations (Beef Pot Roast @ $5.00) call Phil Steinberg at 326-4350 x 5087 by Feb. 19th at 9:00 AM.

GOLDEN GATE SUBSECTION/EAST BAY SUBSECTION/POWER ENGINEERING SOCIETY/ENGINEERING IN MEDICINE & BIOLOGY
FEBRUARY 13
Story on page 7

ELECTRICAL ENGINEERING IN MEDICINE. JOINT MEETING. Dr. Jesse F. Crump, Electrical Engineer and M.D.

FEBRUARY 13, Tuesday, 7:00 PM, Engineers Club of San Francisco, 160 Sansome St., S.F. Cocktails: 6:00 PM, dinner: 7:00 PM. Reservations: Engineers Club (415) 421-3184 no later than noon February 12th.

INDUSTRY APPLICATION SOCIETY
FEBRUARY 27
Story on page 8

OSHA TODAY. Donald T. Meyer, Compliance Officer, U.S. Dept. of Labor (OSHA), San Francisco Regional Office.

FEBRUARY 27, Tuesday, 8:00 PM, Iron Duke (third floor) 132 Bush St., S.F. Cocktails (no host) 6:00 PM, dinner 6:30 PM. Reservations: Frank Trayer, (415) 431-7701; Ted Bubb (415) 781-1177 or Tom Googin (415) 982-2442 by Feb. 26th.

INFORMATION THEORY
FEBRUARY 19
Story on page 8

SIGNAL ACQUISITION IN SYNCHRONIZATION SYSTEMS. Prof. William C. Lindsey, USC and JPL.

FEBRUARY 19, Monday, 8:30 PM, SRI, Bldg. 1, Conference Room B, 333 Ravenswood Ave., Menlo Park. Dinner: 6:15 PM, The Winery, 2391 El Camino Real, Palo Alto. No reservations needed.

MICROWAVE THEORY & TECHNIQUES
FEBRUARY 15
Story on page 5

AUTOMATED MICROWAVE SPECTRUM ANALYSIS. William Ray, Hewlett-Packard Co., Engineering Section Manager.

FEBRUARY 15, Thursday, 8:00 PM, Hewlett-Packard Auditorium, Bldg. 5M, 1501 Page Mill Road, Palo Alto. No dinner.

POWER ENGINEERING SOCIETY
FEBRUARY 6 and 27
Story on page 7

TWO SEMINARS 500 kv CAPACITOR DESIGN and OPERATING EXPERIENCE UNDERGROUND TRANSMISSION CABLE SYSTEMS. Feb. 6: R. H. Webster. Feb. 27: K. N. Akay, both of PG&E.

FEBRUARY 6 and 27, Tuesdays, 5:30 to 7:00 PM, Pacific Gas & Electric Co., 77 Beale St., Room 1760, S.F. No dinner.

POWER ENGINEERING SOCIETY
MARCH 6 thru MAY 29
Story on page 7

TUTORIAL COURSE ON SYMMETRICAL COMPONENTS AND STANDARD APPLICATIONS FOR HIGH VOLTAGE EQUIPMENT. Enrollment will be limited to 55 with preference to members of the Power Group.

MARCH 6 thru MAY 29, Tuesdays, 6:00 to 8:00 PM, with the exception of Mar. 13, Apr. 10 and May 8. Cost of registration: $7.50 for members and $10.00 for non-members. See story for registration application.

RELIABILITY
FEBRUARY 28
Story on page 8

A TOOL FOR FOURIER ANALYSIS. Peter Roth, Digital Signal Section Engineering Mgr., Hewlett-Packard Co. and Hank Fallek, Product Mgr. of Fourier Analyzer, HP Co.

FEBRUARY 28, Wednesday, 8:00 PM, Auditorium, Santa Clara Facility of Hewlett-Packard Co., 5301 Stevens Creek Blvd., Santa Clara. No dinner.

SANTA CLARA VALLEY SUBSECTION
FEBRUARY 23

ENGINEERING A BETTER ENVIRONMENT THROUGH TECHNOLOGY. Speaker to be announced.

FEBRUARY 23, Friday. Reception at 6:30 PM, Mediterranean Room, San Jose Hyatt House. Dinner: 7:30 PM. Reservations: P. H. Simpson, (408) 291-2114 by February 15th.

SYSTEMS, MAN & CYBERNETICS
FEBRUARY 14
Story on page 6

TECHNOLOGY FORECASTING WORKSHOP.

FEBRUARY 14, Wednesday, 8:00 PM, SRI, Conference Room B, Bldg. 1, 333 Ravenswood Ave., Menlo Park. No dinner.

GGSS – EBSS – EMB – PES: JOINT MEETING – ELECTRICAL ENGINEERING IN MEDICINE

Four Group/Society/Subsections jointly are sponsoring an outstanding evening meeting Tuesday, February 13 at the Engineer's Club in San Francisco. Subject of this Meeting:

"Electrical Engineering in Medicine".

It will be presented by Dr. Jesse F. Crump, both an an Electrical Engineer and a Medical Doctor; a combination of skills not often encountered. Dr. Crump is on a speaking tour for the IEEE. Bring your wife to this interesting meeting at the beautiful Engineer's Club. Cocktails available at 6:00 PM, Dinner at 7:00 PM. Call Engineer's Club, 421-3184, by noon Monday, February 12 for reservations. Street parking after 6:00 PM.

FELLOWS ELECTED - Biographies

E. M. T. JONES

Dr. Jones is Vice President of Engineering at Technology for Communications International. He received his B.S. from Swarthmore; M.S. and Ph.D. degrees from Stanford. He joined Stanford Research Institute after receiving his Ph.D. in 1950 and headed the microwave group from 1955 to 1961. He was Director of Engineering of TRG-West from 1961 to 1967, and Engineering Manager of Granger Associates Antenna Division until 1968. Dr. Jones is a member of Sigma Tau and Sigma Xi.

ROBERT E. LARSON

Robert E. Larson (S'58-M'66) was born in Stockton, California on September 19, 1938. He received the B.S. degree from the Massachusetts Institute of Technology, Cambridge, Massachusetts, in 1960, and the M.S. and Ph.D. degrees from Stanford University, Stanford, California in 1961 and 1964, respectively, all in Electrical Engineering.

In 1968 he and two colleagues founded Systems Control, Inc., Palo Alto, California, where he is currently Executive Vice President. From 1964 to 1968 he was with the Information and Control Laboratory, Stanford Research Institute, Menlo Park, California. He has also been employed by the IBM Corporation and the Hughes Aircraft Company.

He is the author of State Increment Dynamic Programming (New York: Elsevier, 1968) and over ninety technical papers. His fields of specialization are computational aspects of dynamic programming and applications of optimal control and estimation theory.

Dr. Larson received the IEEE Group on Automatic Control Best Paper Award in 1965 and the 1968 Donald P. Eckman Award for outstanding Achievement in the field of automatic control from the American Automatic Control Council. He was also named the Outstanding Young Electrical Engineer for 1969 by Eta Kappa Nu.

He has served the IEEE Control Systems Society in a number of capacities, and is presently Vice Chairman of the Society, Chairman of its Information Dissemination Committee, and an elected AdCom member. He will also be Program Chairman for the 1973 Joint Automatic Control Conference.

B. A. AULD

B. A. Auld was born on November 4, 1922, in Honan, China. His undergraduate studies were taken at the University of British Columbia (1946) and he received the PhD degree in electrical engineering from Stanford University in 1952. From 1953 to 1955 he was at Electrical and Musical Industries, London, England. Following this, he was with the Electrical Engineering Department of the University of British Columbia for three years. Since 1958, he has been at the Microwave Laboratory, Stanford University, where he has been active in the fields of microwave ferrites, microwave acoustics and acoustic imagery.

ARTHUR M. HOPKIN

Arthur M. Hopkin was born in Burley, Idaho on February 25, 1919. He obtained a B.S. degree in Electrical Engineering from Georgia Institute of Technology in May, 1942, and then served in the U.S. Naval Reserve from 1942 through 1946. He obtained the M.S. and Ph.D. degrees in Electrical Engineering from Northwestern University in 1947 and 1950, respectively, and served as an Assistant Professor of Electrical Engineering there from 1950 to 1954. In 1954 he joined the Electrical Engineering (now Electrical Engineering and Computer Sciences) Department of the University of California as an Associate Professor, later became a Professor, served as Vice Chairman for graduate study in the Department, and is still at Berkeley.

H. J. SHAW

H. J. Shaw received the B.S. degree from the University of Washington and the Ph.D. degree from Stanford University, both in Electrical Engineering. He is currently Associate Director of the Microwave Laboratory at Stanford University. He is past chairman of the San Francisco Chapter of the Group on Electron Devices, and is currently a member of the AdCom of the Group Sonics and Ultrasonics. His current research activities are on devices for acoustic signal processing.

G. D. WALLENSTEIN

Gerd D. Wallenstein, 59, retired in 1970 as Vice President of Planning of GTE Lenkurt Incorporated, a subsidiary of General Telephone and Electronics Corporation. He has been responsible for the company's product position and for the development of a large part of its key technical and management personnel. Mr. Wallenstein joined Lenkurt in 1948 as an applications engineer, becoming chief applications engineer in 1952; vice president for product planning in 1956; and vice president planning in 1963.

Mr. Wallenstein was born and educated in Berlin, Germany. He studied Electrical Engineering at the Technical University, Berlin, and has recently obtained an M.S. degree in Cybernetic Systems from the California State University, San Jose.

Mr. Wallenstein is the author of many articles for technical and trade journals, and has given a number of Spanish-language talks in Latin America. He is a senior member of IEEE, member of the Independent Telephone Pioneer Association, and member of the Societe des Electriciens, des Electroniciens et des Radiotechniciens. He has been a frequent member of the United States team at International Telecommunications Union meetings. In 1968, he was elected Vice Chairman of Study Group GAS/3 (Technical and Economic Comparisons of Transmission Systems), of the ITU's technical committee CCITT. In 1963, he received the Capitan de Anza award of the Public Relations Society of America, San Francisco chapter, for a successful campaign in the international cultural field.

Mr. Wallenstein has been a frequent guest lecturer at American Management Association (AMA) seminars. The AMA has published his bulletin "Fundamentals of Technical Manpower Planning" in 1966, and a book "Concept and Practice of Product Planning" in 1968. He has lectured at the invitation of such diverse organizations as the Institute of Management Studies, Kingston, Jamaica and the I.T.U. Technical Assistance Program in Geneva, Switzerland. In 1971, he developed and taught a new course on International Telecommunications as Social Systems, at California State University, San Jose. The course has since been expanded under a pioneering instruction-by-TV program, in cooperation with the Association for Continued Education. He is also a visiting fellow in the Engineering-Economic Systems Department at Stanford University, contributing special studies to the Institute for Public Policy Analysis.

COM – AES – EMC JOINT MEETING QUEST FOR LONG HAUL MILLION-VOICE-CHANNEL TRANSMISSION SYSTEMS

The Communications Society will hold a joint meeting with the AES and EMC Groups in February. Mr. C. Louis Cuccia will discuss "The Quest for Million-Voice-Channel Long Haul Transmission Systems". The mounting traffic in voice communications, and its equivelant requirements in high definition image data, and future personal TV transmissions accompanying voice transmissions, is making new demands on the technology of ultra wide band data transmission.

Some of the pertinent systems presently in planning in the United States and Japan using satellite communications, line-of-sight systems, and other approaches, will be discussed and compared. Technology of modulation, demodulation, and multiple channel operation for each will be described.

Mr. Cuccia received his BSEE and MSEE degrees from the University of Michigan, and did graduate work at Princeton. He spent several years with RCA Laboratories and in their Microwave Operations, and their West Coast Microwave Engineering Laboratories. In 1966 he joined Philco-Ford, and presently is responsible for advanced RF Systems used in high data rate, high frequency communication systems.

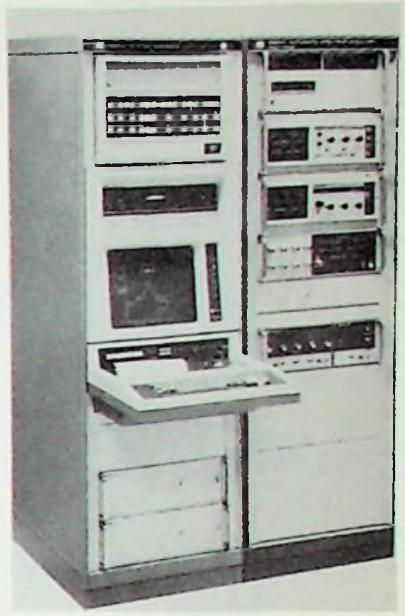
ED – SOLID STATE MICROWAVE AMPLIFIERS: DIODES VS. TRANSISTORS

The solid state microwave amplifier is rapidly replacing the traveling wave tube in a number of applications. The reflection amplifier using Gunn or Impatt diodes offers wide bandwidth and high output powers at frequencies above 4 GHz. But recent advances in silicon and gallium arsenide transistor technology are permitting these devices to challenge the reflection amplifier at X band. Reflection amplifiers will be compared with transistors amplifiers by two leading engineers in the field of solid state microwave amplifiers.

Harry Cooke received the B.S.E.E. degree from the University of Arkansas in 1948. From 1957 to 1970 he was with Texas Instruments, Inc. where he worked on transistor applications and microwave transistor development. In 1970 he joined Avantek, Inc., Santa Clara, Ca. where he is now Manager of the Transistor Department.

W. Keith Kennedy, Jr. received the Ph.D. degree from Cornell University in 1968. Since 1968 he has been with the Watkins-Johnson Co., Palo Alto, Calif. where he is now Head of the Solid State R & D section of the Solid State Division, and is responsible for the design and development of new microwave solid state sources and bulk GaAs amplifiers.

MTT – AUTOMATED MICROWAVE SPECTRUM ANALYSIS



The marriage of a spectrum analyzer, an interactive graphics console and a mini-computer has led to a powerful RF and microwave test instrument. The system design was done from the ground up based on our experience with our previous large instrument, an automated network analyzer.

The user – a test engineer – sees an idealized spectrum analyzer implemented by a mix of hardware and software. The hardware/software boundary could be set by engineering considerations because we organized into product-oriented teams with all the needed technical specialists, and because the digital system bus does not stand in the way of such tradeoffs. Thus the computer becomes a microwave measurement tool, not just a data formatter.

To adequately communicate the impact of interactive graphics on measurements, the system pictured will be demonstrated.

Mr. William Ray has been with Hewlett-Packard for five years and is now Engineering Section Manager for these spectrum analysis and graphics systems. He previously measured and analyzed antennas for Stanford Research Institute.

IEEE INTERCON – 1973 REVISED MEETING CALENDAR

International Convention–Exposition.

MARCH 26-30, 1973
Convention technical program,
Hotel Americana, New York City

MARCH 27-30, 1973
Product exposition,
New York Coliseum

For further information:
IEEE INTERCON
Don Larson, Manager
345 E. 47th Street
New York, N. Y. 10017

ZWORYKIN AWARD WON BY DR. ALBERT MACOVSKI – SRI

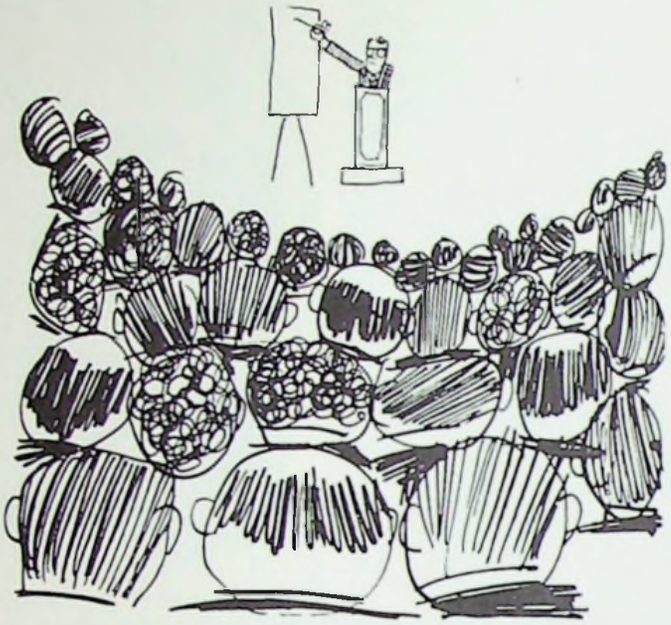
The VLADIMIR K. ZWORYKIN AWARD, marking outstanding technical contribution in the field of electronic television, will be presented to Albert Macovski, "For contribution to single tube encoded color cameras and color television receiving circuits."

Dr. Macovski is a staff scientist, Stanford Research Institute, Menlo Park, California. Employed by the Institute since 1960, he has worked in the areas of bandwidth compression, optical data processing, holography, facsimile systems, color television cameras, and image processing.

EMB – NOMINATIONS FOR GROUP CHAPTER OFFICERS' POSITIONS 1973-1974

Although it may seem rather early to seek such nominations at this time of year, it is indeed time. There are four positions: Chairman, Vice Chairman, Secretary, and Treasurer. It is incumbent on the person making the nomination to secure an acceptance from the nominee to serve as an officer if elected. The nominee should be a group member with a "Member" grade or higher. No later than March 26, 1973, please send your nominations to: L. D. Prehn, Chm. EMB, Room 608, 111 No. Market St., San Jose, Calif. 95113.

PRACTICAL APPLICATION OF NEW TECHNOLOGY WILL BE EXPLORED AT WINCON '73



New business potentials in the fields of health, education, communications, transportation and law enforcement will be featured during IEEE's WINCON '73 to be held February 13, 14 and 15 at the International Hotel in Los Angeles. M.D. Margolis, WINCON general chairman and president of North American Rockwell's Autonetics Division, said the conference will concentrate on current status and realistic projections of future business using advanced technology.

Participation of Chamber of Commerce agencies in WINCON planning exemplifies the shift in orientation to practical, down-to-earth business development needs.

Setting the stage for the conference theme – "Emerging Business Opportunities Through New Technologies" – will be the annual John von Neumann lecture series.

There will be panels of experts to provide detailed information on business potentials in specialized areas headed by panel chairmen listed:

Education and Training - Dr. Ralph McCreary, vice president and general manager, Hoffman Information Systems.

Medical and Health Services - Bruce S. Angwin, Director, Medical-Engineer Program, N.S.P.E.

Communications - John J. Guarrera, Director, IEEE Region 6 and president, SACOM Company.

Transportation - Robert H. Cannon, Jr., Asst. Secretary for Systems Development and Technology, U.S. Department of Transportation.

Law Enforcement - Douglas A. Morrison, Manager, Technology Transfer Projects, Office of the Mayor, City of Los Angeles.

U.S. Sen. Robert C. Byrd of West Virginia, the Senate majority whip, will speak at the annual WINCON banquet, February 14, and Lt. Gen. Kenneth W. Schultz, commander of the Air Force Space and Missile Systems Organization, will speak at the luncheon session February 13.

Registration for the three-day conference will be $25 for non-members and $20 for members of IEEE or other professional organizations cooperating in WINCON '73. One-day registration is $10, with a special $2 rate for students.

Concurrent with WINCON will be a classified symposium sponsored by the Air Force Systems Command and the Aerospace Corporation. One registration fee will provide admission to either WINCON or the AFSC symposium with proper security clearance.

Applications and detailed programs may be obtained for IEEE WINCON, 3600 Wilshire Blvd., Los Angeles, Calif. 90010. For further information, contact: Ernie Brashear (714) 632-4195.

SMC – TECHNOLOGY FORECASTING WORKSHOP

In the February meeting, we depart from the usual speaker format to conduct a technology forecasting workshop on developments to be expected in the field of artificial intelligence, and the effects of such developments on society. The workshop, modelled on the one at the 1972 SMC Annual Conference in Washington, D.C., has a two-fold purpose: (1) to develop material for the Chapter's Technological Forecasting and Assessment Project, and (2) to see whether the workshop format is a creative alternative to the usual speaker-audience type of meeting.

The attendees will be able to choose either the "technology and application" group, or the "consequences" group, and at the end of a "round", a certain amount of changing group membership will be allowed. The first group will postulate likely technological developments in artificial intelligence, as well as specific applications of these developments. The consequence group will assess the effects of such developments on Society.

The workshop will be introduced by Dr. L. S. Coles of SRI's Artificial Intelligence Center, who participated in the Washington workshop.

AP – SHORT COURSE NUMERICAL METHODS IN E.M.

Four 90 minute lectures will be given by experts in Numerical Methods. The course is intended for those who have working knowledge in electromagnetic theory, calculas and Fortran. The topics of the lectures and the speakers are as follows:

"Foundations of Numerical Methods"
– Dr. Frank B. Harris, TCI.
"Linear Wire Antennas"
– Dr. Thomas N. C. Wang, SRI.
"Numerical Techniques in Arrays"
– Dr. Anthony G. Jennette, ESL.
"Transient Electromagnetism"
– Dr. Edmund K. Miller, Lawrence Livermore Laboratory.

Registration Fee – $15.00, including lecture notes and certificate of completion.

GGSS – EBSS – PES – EMB JOINT MEETING
ELECTRICAL ENGINEERING IN MEDICINE

The Golden Gate and East Bay Subsections, Power Engineering Society and Engineering in Medicine and Biology Group will hold a joint evening dinner meeting and ladies night in San Francisco.

Have you ever wondered how electrical engineering has been applied to the study of medicine? Let Dr. Jesse F. Crump, electrical engineer and medical doctor, (a professional combination of skills not often encountered), describe some of the ways that electrical engineering and other engineering disciplines are being used to advance research, diagnostic, and operating techniques in the many areas of medicine.

Dr. Crump has considerable experience in using electrical engineering principles and equipment in diagnosing medical problems.

Gain some insight on the safety and reliability in medical electronics. Learn how a fluoroscope, television and recording system are used in combination with catheters and dye to study and diagnose troubles in the cardiovascular system. Find out about his current work on a Princeton University research Project on the psychology of hearing. The ear is a transducer which sends electrical signals to the brain upon receiving sound inputs. The problem is how to measure and study the electrical signals of the neurons in order to determine the effect of sound on the brain and the body.

Dr. Crump's wife, a doctor and diagnostician in her own right, will also be in attendance and will be available for questions.

Come and join us and bring your wife or lady friend for an interesting and enjoyable evening at the Engineer's Club of San Francisco.

PES – FEBRUARY SEMINARS

On February 6, R. H. Webster will discuss design and operating experience with the 500 kv series capacitors used to compensate for series reactance in the West Coast Intertie 500 kv transmission lines. Mr. Webster received BSEE and MSEE degrees from the University of California and is an electrical engineer in the Engineering Planning Department of PG&E.

On February 27, K. N. Akay will discuss several types of underground cable systems and the practical problems of designing, installing and operating such systems. Mr. Akay received a BSEE degree from the University of California and is a Senior Electrical Engineer in the Transmission and Generation Engineering Department of PG&E.

Both seminars will be from 5:30 to 7:00 p.m. at PG&E, 77 Beale Street, San Francisco in Room 1760.

PES CHAPTER SPONSORS TUTORIAL COURSE ON SYMMETRICAL COMPONENTS AND STANDARD APPLICATIONS FOR HIGH VOLTAGE EQUIPMENT

The San Francisco Chapter of the IEEE Power Engineering Society is sponsoring a series of lectures on Symmetrical Components and Standard Applications for High Voltage Equipment starting March 6, 1973. Ten lectures are planned, covering basic principles and practical methods of system and equipment analyses. The topics to be covered include basic mathematical calculation methods and analyses of generators, motors, transformers, buses, distribution and transmission lines. The lectures will be conducted on a level to provide useful and practical information to engineers in the power and industrial field. Each lecture will be presented by an engineer who is well qualified in the field being discussed.

The lectures will be given at Pacific Gas & Electric Co., 77 Beale Street, Room 1760, San Francisco. They will be held on Tuesday evenings from 6:00 to 8:00 p.m. starting March 6 and continuing through May 29 with the exception of March 13, April 10, and May 8.

Cost of registration will be $7.50 for members and $10.00 for non-members. Enrollment will be limited to 55 with preference to members of the Power Group. Advance registration is required which can be done by using the accompanying form.

SYMMETRICAL COMPONENTS AND STANDARD APPLICATIONS FOR HIGH VOLTAGE EQUIPMENT

Enclosed is my check (Payable to S.F. IEEE Power Group) in the amount of $_____ to cover enrollment for:

Name: _____

Bus. Address: _____

_____

(City, State, and Zip)

Bus. Phone: _____

Member of IEEE _____

Power Group _____

Other _____

Mail this form and payment to:
Michael P. Hurley
Pacific Gas & Electric Company
77 Beale Street, Room 1923
San Francisco, California 94106

See CALENDAR for Program Arrangements

IT – SIGNAL ACQUISITION IN SYNCHRONIZATION SYSTEMS

Some general results pertaining to the signal acquisition problem will be presented for a class of synchronization systems. Emphasis is on characterizing signal acquisition time and range as a function of the phase detector characteristic and the system order.

William C. Lindsey received the B.S. degree in electrical engineering from the University of Arkansas in 1958 and the M.S. and Ph.D. degrees in electrical engineering from Purdue University. He has worked as a Senior Research Engineer and Supervisor of the Telemetry Research Group at the Jet Propulsion Laboratory, Calif. Inst. of Tech. Currently he is an Associate Professor of Electrical Engineering at the University of Southern California and is a consultant to the Telecommunications Division of the Jet Propulsion Laboratory. Dr. Lindsey is the author of numerous technical papers in statistical communications theory and is well known for his work in phase-locked loops and other synchronization systems.

CS – SOME RESULTS IN LINEAR DISCRETE-TIME ESTIMATION

Discrete-time results are usually natural analogs of the corresponding continuous-time results but occasionally there are surprising differences. We shall explore three such questions: 1) why "differencing" does not seem to be as effective as differentiation in reducing estimator complexity? 2) why autoregressive-moving average representations seem to be more useful in discrete-time? 3) why the discrete-time versions of certain new Chandrasekhar algorithms differ from the continuous-time versions?

Thomas Kailath received his Ph.D. at MIT in 1961. He is now a Professor of Electrical Engineering and Director of the Information Systems Laboratory at Stanford University. He has held a Guggenheim Fellowship and has also taught at Cal Tech and U.C., Berkeley. He is a Fellow of the IEEE and is a member of the Administrative Committees of the IEEE Professional Group on Information Theory and the Control Systems Society.

IAS – HOW DOES OSHA FIT IN?

The IAS Chapter will meet at the Iron Duke on February 27, 1973 and will have as their speaker, Mr. Donald Meyer Compliance Officer of the U.S. Department of Labor, Occupational Safety and Health Administration. The subject of Mr. Meyer's talk will be titled "OSHA Today". He will discuss the impact of the relatively new OSHA regulations upon the electrical industry and the enforcement of these regulations.

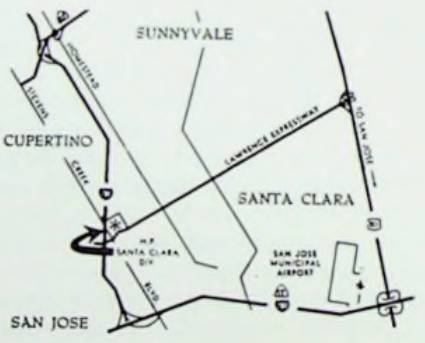
Mr. Meyer is presently Regional Training Coordinator and acting Assistant Regional Administrator for the Technical Superintendent and after a career in the U.S. Army, in which he specialized in Safety Management. He is continuing these activities with the Department of Labor.

R – A TOOL FOR FOURIER ANALYSIS

If you need frequency related characteristics about electrical or mechanical systems, a new technique is available using digital fourier analysis. The theory of the technique along with a demonstration of Hewlett-Packard Fourier Analyzer will be presented at the next Reliability Group meeting. The Analyzer, like the mathematical technique, is somewhat universal in application. It can analyze dynamic properties of structures and control systems and help resolve many vibration/noise type problems.

Peter Roth was project leader for the Fourier Analyzer. Before joining H-P in 1965, he worked in high frequency communication and Loran equipment. He received his BSEE and MSEE degrees from Stanford in 1959 and 1961.

Hank Fallek received his BEE and MEE degrees from the University of Dayton and Brooklyn Polytechnical in 1966 and 1967. He was primarily in RF circuit design with Magnevox, DANA Labs and H-P from 1967 to 1970. Since 1971 he has been with the H-P Marketing Group.



A & E – DIGITAL SPEECH

The speaker at the Feb. 8 meeting of the Audio & Electroacoustics Group will be Dr. George White, head of Speech Recognition Group at the XEROX Research Center in Palo Alto. Dr. White is involved with the design of hardware and software for computers to recognize spoken language, and will speak on Digital Speech Recognition in Real Time.

The talk will be illustrated with an operating XDS computer with peripherals and software developed by Dr. White and his group. This computer operates in response to spoken commands. A question and answer period will follow the presentation and demonstration. As always, wives, guests and all interested persons are welcome to attend.

See CALENDAR for Program Arrangements