

EDITOR'S PROFILE of this issue

from a historical perspective ...

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

October, 1971:

Cover: The anechoic chamber for antenna testing at Lockheed. It has a 30-foot cube of quiet volume. A tour is scheduled. More on page 2.

Page 4: Bob Burmeister of HP talks about magnetic bubble devices. I spent several years (1972-74) doing liquid-phase epitaxy and evaluation for bubble memories when I was at ISS. Later I knew Bob socially, and we'd chat about bubbles and LEDs.

Page 6: Peter Denning, EE professor at Princeton, talks about a programmers view of human behavior. Later he becomes known for research in computer operating systems and writes a book on operating systems. After stints at Purdue and NASA-Ames, he joins the Naval Postgraduate School in Monterey, and writes articles for the ACM Communications Magazine, where he had served in various officer positions and as EIC.

Page 8: We learn more about the Stanford Instructional Television Network (SITN) and its associated Association for Continuing Education (ACE). Chuck Davis takes over management of ACE; I worked with him to gain access to the network in the evenings to broadcast IEEE short courses to the participating companies. More information is in the December 1980 GRID.



Archive of available SF Bay Area GRID Magazines is at this location:

https://ethw.org/IEEE_San_Francisco_Bay_Area_Council_History

At time of scanning, the bound volumes are held by Paul Wesling.

April, 2025

Contact p.wesling@ieee.org

Grid

October 1971



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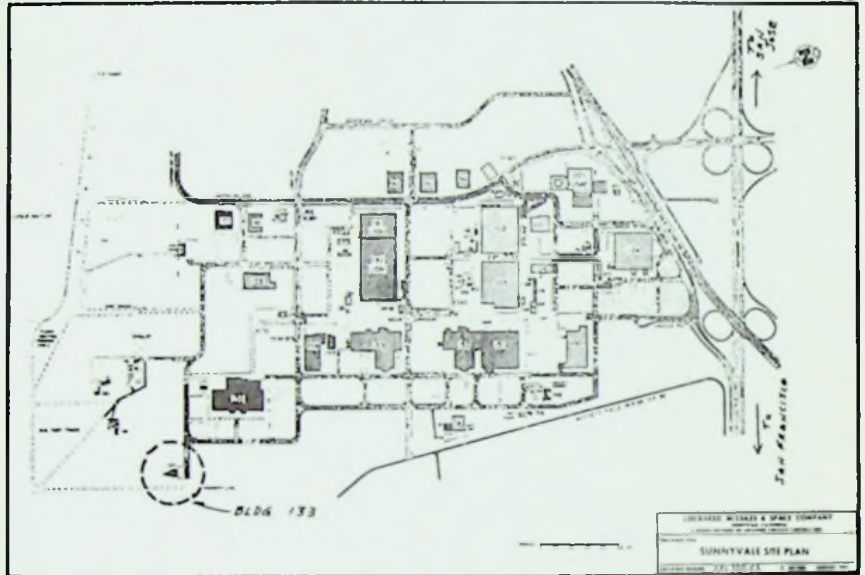
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THE COVER STORY

Antennas and Propagation Group to Tour Lockheed Anechoic Chamber

The cover picture of the October GRID represents an inner view of Lockheed's R.F. Anechoic Chamber is 50' x 50' x 173', and provides a 30' cube quiet zone. It

is lined with 24,580 sq. ft. of absorber and is used to evaluate advanced antenna/vehicle systems at frequencies from below 100 MHz to above 30 GHz.



The chamber, completed late in 1970 at a cost of \$1.25 million, is one of the most advanced and largest of its type in the free world. It is housed in its own building. The tour will be conducted by members of the LMSC Antenna Laboratory Staff, and

will include motion pictures of actual chamber operations, as well as demonstrations of the instrumentation and model handling equipment. Meet at 8 PM in the parking lot of Bldg. 133, at the Lockheed Sunnyvale Plant. (See map).

East Bay Subsection to hear story on Magnetic Recording of Very Fast Transients

A recently developed application of thin magnetic films will be the subject of the East Bay Subsection's October meeting. Dr. Ronald Wichner of the Lawrence Livermore Laboratory will discuss the development of methods and hardware by which fast transient signals may be recorded and read out. The technique being investigated has the potential of recording and subsequently digitizing transient signals of only a few nanoseconds duration. Dr. Wichner received his BS in Chemical Engineering from the

Cooper Union in 1959 and a PhD degree in Nuclear Engineering from the University of California, Berkeley, in 1966. He has been employed in the Electronics Engineering Department, Engineering Research Division of the Lawrence Livermore Laboratory since 1967. At the Laboratory he has been active in development of germanium crystal growth techniques and photo- and electrovoltaic devices. The last one and one half years have been devoted to developing magnetic thin films of very high quality for use in the recorder that will be described.

MEETING CALENDAR

AEROSPACE & ELECTRONICS SYSTEMS OCT. 21

Story on page 5

TOUR OF PACIFIC TELEPHONE COMMUNICATIONS CENTER. Limited to 40 persons, U.S. citizens only.

OCT. 21, Thursday, 7:30 PM, PTT Communications Center, 430 Bush St. (near Pine), San Francisco. No dinner. For tour reservations call Pat Hoppe, 326-4350 x 6143 by Oct. 12th.

ANTENNAS & PROPAGATION OCT. 14

Story on page 2

TOUR OF LOCKHEED ANECHOIC CHAMBER

OCT. 14, Thursday, 8:00 PM, Lockheed M & S Co., Bldg. 133, Sunnyvale. Cocktails 5:30; dinner 6:15 PM, Bold Knight, 769 Mathilda Ave., Sunnyvale. No Reservations. (See map with story).

AUTOMATIC CONTROL SOCIETY OCT. 19

INTERACTIVE DIGITAL SIMULATION OF A WASTE WATER TREATMENT PLANT. Dr. Robert Linebarger, NASA, Ames Research Center.

OCT. 19, Tuesday, 8:00 PM, Lockheed Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto. Dinner: 6:15 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. No reservations.

COMPUTER SOCIETY OCT. 20

Story on page 6

"LOCALITY OF REFERENCE" as a Fundamental Property of Program Behavior. Dr. Peter J. Denning, Asst. Prof. of electrical Engineering at Princeton University.

OCT. 20, Wednesday, 8:00 PM, Skilling Auditorium, Stanford University. Dinner: 6:15 PM, Rick's Swiss Chalet, 4085 El Camino, Palo Alto. Reservations: Rita Pulver, 321-3300 x 258.

EAST BAY SUBSECTION OCT. 18

Story on page 2

MAGNETIC RECORDING OF VERY FAST TRANSIENTS. Dr. Ron Wichner, Lawrence Livermore Labs.

OCT. 18, Monday, 7:30 PM, PG&E Service Center, 4801 Oakport St., Oakland. No dinner.

ELECTROMAGNETIC COMPATIBILITY OCT. 18

THE APPLICATION OF INTERFACE ELEMENTS IN INTEGRATED CIRCUIT DESIGN. Orlando Gallegos, Marketing Manager, Raytheon Co.

OCT. 18, Monday, 8:00 PM, Hewlett-Packard Auditorium, 5301 Stevens Creek Blvd., Santa Clara. Dinner: 6:00 PM, Custom House, 20060 Stevens Creek Blvd., Cupertino. No reservations.

ENGINEERING MANAGEMENT OCT. 20

Story on page 8

DEMONSTRATION, TOUR AND DISCUSSION OF THE STANFORD INSTRUCTIONAL TELEVISION NETWORK. Kenneth S. Down, Administrative Mgr., and Martin Grushkin, Chief Engineer of the Stanford Network; and Charles M. Davis, General Mgr., Association for Continuing Education.

OCT. 20, Wednesday, 8:00 PM, Room 191 (upper level) Skilling Bldg., Stanford. (See map with story). No dinner. Meeting will start promptly at 8:00.

GOLDEN GATE SUBSECTION OCT. 19

Story on page 5

THE ROTARY ENGINE AND MAZDA AUTOMOBILE - AN APPRAISAL FOR ENGINEERS. Cecil A. Whitebone, Pres. and Tom Zumwalt, Service Mgr., Adams Whitebone Mazda Co., S.F.

OCT. 19, Tuesday, 12:00 noon, Luncheon meeting, Bechtel Bldg., 50 Beale St., 2nd floor. Meeting Rooms A. B. C. Reservations: S.F. Martin McLaren, 764-5294. Peninsula - Jack Shulman, 327-8919.

INDUSTRIAL ELECTRONICS & CONTROL INSTRUMENTATION OCT. 20

Story on page 7

ERROR DETECTION IN DATA ACQUISITION AND SUPERVISORY CONTROL SYSTEMS. Dennis J. Gausheill, Mgr., Systems Analysis for Control System Industries, Santa Clara.

OCT. 20, Wednesday, 7:45 PM, Rickey's Hyatt House, 4219 El Camino, Palo Alto. Cocktails at 6 and dinner at 6:30 PM. Reservations: Fran Casalino (408) 289-2365 by Oct. 19th.

INDUSTRY & GENERAL APPLICATIONS OCT. 26

Story on page 8

PACIFIC CEMENT & AGGREGATES' MOVEABLE QUARRY ROCK CRUSHING PLANTS AND OVERLAND CONVEYOR SYSTEM. Herbert L. Gaskin, Jr., Chief Engineer, PG&A Div. Lone Star Industries, Inc.

OCT. 26, Tuesday, 7:30 PM, Marconi's 122 Battery St., S.F. Dinner at 6:30 PM. Reservations: Bill Poynter, (415) 697-7040.

INFORMATION THEORY OCT. 21

Story on page 5

THE VITERBI ALGORITHM. Dr. G. David Forney, Jr., Stanford University.

OCT. 21, Thursday, 8:30 PM, SRI Bldg. 1, 333 Ravenswood Ave., Menlo Park. Dinner: 6:00 PM, Velvet Turtle, 325 Sharon Park Dr., Sharon Heights Shopping Center, Menlo Park. Reservations: Paul Shaft, (408) 734-2244 x 342 by Oct. 20th.

INSTRUMENTATION MEASUREMENT OCT. 11

Story on page 4

INSTRUMENTATION & MEASUREMENT APPLICATIONS IN SPACE MEDICAL RESEARCH. Dr. J. M. Lagerwerff, M.D., Consulting Scientist - Aerospace Medicine, LMSC, Sunnyvale.

OCT. 11, Monday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Dinner: 6:30 PM. Reservations: Sunnie Marr, (408) 742-6868 by Oct. 10th.

MAGNETICS OCT. 28

Story on page 4

MAGNETIC BUBBLES: PROGRESS AND PROBLEMS. Dr. Robert A. Burmeister, Jr., Dept. Head, Materials Research Dept., Hewlett-Packard Co.

OCT. 28, Thursday, 8:00 PM, Hewlett-Packard, 5301 Stevens Creek Blvd., Santa Clara. No dinner.

MICROWAVE THEORY & TECHNIQUES/ ELECTRON DEVICES OCT. 21

Story on page 5

JOINT MEETING. AN ACADEMIC YEAR IN ISRAEL. Dr. Leo Young, SRI, Menlo Park.

OCT. 21, Wednesday, 8:00 PM, SRI Auditorium, Bldg. 44, Laurel Street, Menlo Park. Dinner: 6:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Reservations: Don Messner, (415) 321-5135 by Oct. 20th.

PARTS HYBRIDS & PACKAGING OCT. 12 thru NOV.16

Story on page 4

SIX-SESSION COURSE ON DISPLAY DEVICE TECHNOLOGY. Session 1: Oct. 12 - Display Technology Overview. Session 2 - Oct. 19 - Light Emitting Diode Device Physics and Processes. Both by Dr. John Moll, Fairchild.

OCT. 12 and 19, Tuesdays, 7:30 to 9:30 PM, Hewlett-Packard Auditorium, 5301 Stevens Creek Blvd., Santa Clara. Registration fee \$15 per person. See story for details.

POWER ENGINEERING SOCIETY OCT. 12

Story on page 7

TOUR OF HUNTERS POINT SHIPYARD. Limited to 100 persons. Ladies welcome. \$1.00 per person payable when boarding the bus.

OCT. 12, Tuesday, 7:00 PM from Engineers Club, 160 Sansome St., S.F. Social hour at 5:15 and dinner at 6:00 PM. Mail reservations or call J.B. MacLean, Westinghouse Electric Co., One Maritime Plaza, S.F. (415) 445-2251

RELIABILITY OCT. 13

Story on page 6

RELIABILITY PLANNING FOR A TWO-MILE ACCELERATOR. Kurt Breymayer, SLAC.

OCT. 13, Wednesday, 8:00 PM, Stanford University Physics Lecture Hall PH 104. Dinner: 6:30 PM, Stanford View Restaurant, El Camino at Stanford St., Palo Alto. Reservations: Call Dick Cornwell at 966-3877 by Oct. 12th.

SYSTEMS, MAN & CYBERNETICS/BIO-MEDICAL ELECTRONICS OCT. 11

Story on page 7

JOINT MEETING. THE APPLICATION OF SYSTEMS ANALYSIS FOR DIAGNOSING LATENT DISEASE. Dr. John H. Frenster, M.D., Prof. of Medicine, Stanford University.

OCT. 11, Monday, 8:00 PM, Conference Room B., Bldg. 1, SRI, 333 Ravenswood Ave., Menlo Park. Dinner: 6:00 PM, Red Cottage, 1706 El Camino, Menlo Park. Reservations: Section office (415) 327-6622 by noon, Oct. 8th.

**Instrumentation and Measurement
Group to hear of Applications in
Space Medical Research**



"Instruments and Measurement Applications in Space Medical Research" will be a presentation by Dr. J.M. Lagerwerff, M.D., Consulting Scientist, Aerospace Medicine, Lockheed Missiles and Space Corp. This presentation consists of a comprehensive space medical research facility, currently under development for the late seventies or early eighties. Emphasis will be placed on the unique problems associated with performing everyday medical measurements under weightlessness conditions on board a space vehicle, and the manner in which some of these problems have been solved.

Dr. Lagerwerff holds the position of Chief Physician for Lockheed's Biotechnology Department, and is Medical Director for the company's Integral Medical and Behavioral Laboratory Measurement Program.

He is responsible for recognition and investigation of potential physiological stresses and biological hazards associated with aerospace, underwater, and subterranean operations, and performs monitoring duties as supervisory physician during space chamber and man-machine compatibility studies.

Dr. Lagerwerff received his M.D. degree in Batavia, Dutch East Indies, then served in the Royal Netherlands Air Force from 1941 to 1958. He obtained a degree in Electronics Engineering from the British Institute of Engineering Technology in 1957. He has followed several postgraduate courses in aviation and aerospace medicine, and is a diplomate of the USAF School of Aerospace Medicine. He has published and presented over three dozen papers on aerospace and hyperbaric medicine, and biomedical instrumentation, since his emigration to the United States.

**CALL FOR PAPERS
1972 I.E.E.E.
REGION SIX CONFERENCE**

The 1972 I.E.E.E. Region Six Conference will be held at the Hilton Inn, San Diego, California April 19-21, 1972. The conference will present two series of sessions concurrently; one series of GENERAL TOPICS and the other devoted entirely to the conference special theme of MICROELECTRONICS. Papers for this important conference are invited.

The published transactions will be limited to about four pages per paper, including figures, to be printed immediately prior to the meeting by offset lithography. Authors will have until March 15, 1972 to submit camera-ready copy.

250 word abstracts should be submitted by October 15, 1971, to:

Dr. D. C. Kalbfell
Technical Program Chairman
c/o Instruments, Inc.
P.O. Box 10764
San Diego, Ca. 92110

Authors will be notified of acceptance and receive manuscripts packets by January 15, 1972.



**PARTS HYRIDS and PACKAGING GROUP to PRESENT SIX
SESSION TUTORIAL on "DISPLAY DEVICE TECHNOLOGY"**

The PHP Group will present an exciting course on Display Device Technology each Tuesday evening from October 12 through November 16. Details were given in the September GRID. The course will be held at the Hewlett-Packard Co. auditorium, Santa Clara Div., 5301 Stevens Creek Blvd., Santa Clara, from 7:30 to 9:30 pm. Course registration fee is \$15 per person and advance registration is recommended. Make checks payable to the PHP Group, IEEE, and send to either:

**"Magnetic Bubbles:
Progress and
Problems"**

The Magnetics Group will sponsor a talk by Dr. Robert A. Burmeister Jr., titled "Magnetic Bubbles: Progress and Problems," on Thursday, October 28.

Magnetic Bubble Devices may provide inexpensive and reliable digital information storage with high retrieval rates. This possibility has been the impetus for research into single crystal uniaxial magnetic materials and for development of devices utilizing these magnetic materials. The materials problems to be overcome have been formidable. However, recent developments in the composition and growth techniques of single crystal uniaxial rare earth orthoferrites and garnets have been significant.

Dr. Burmeister will discuss these recent advances in the magnetic Bubble Technology. He will also discuss the problems which remain to be solved including some of the design difficulties which must be overcome if a Memory System is to be realized.

Dr. Burmeister is presently Department Head, Materials Research Department, Hewlett-Packard Laboratories in Palo Alto. He received his PhD degree in Materials Science from Stanford in 1965. Since then he has been with Hewlett-Packard and has been concerned with the preparation characterization, and measurement of physical properties of compound semiconductors, semiconducting alloys, and magnetic materials, including rare earth orthoferrites and garnets.

The meeting will be held at Hewlett-Packard, 5301 Stevens Creek Boulevard, Santa Clara at 8:00 pm.

W. Littell, Sec. Treas.
PHP Display Course, Raytheon
350 Ellis Street
Mt. View, Calif. 94040
Phone 968-9211

or

J. Schlageter, Vice Chm.
PHP Display Course
Fairchild Semiconductor
464 Ellis Street-M.S. 20-2811
Mt. View, Calif. 94040
Phone 962-3393

Information Theory Group Presents Tutorial

The Information Theory Group will present a tutorial introduction to the Viterbi algorithm (as it is called in its convolution coding incarnation) and some of its applications. Place of the Meeting is SRI Bldg. 1, 333 Ravenswood Ave., Menlo Park, 8:30 pm Thursday, October 21. Dinner 6:00 pm. at the Velvet Turtle, 325 Sharon Park Drive, Sharon Heights Shopping Center, Menlo Park. For reservations call: Paul Shaft, 734-2244, ext. 342, by Oct. 20.

The algorithm can be used in any problem which can be characterized as the estimation of the state sequence of a discrete-time, finite-state Markov source in the presence of memoryless (white) noise. It is distinguished not only by its suitability for implementation but also by its amenability to analysis, in sharp contrast to other nonlinear

detectors. Applications to be discussed include decoding of convolutional codes, estimation of digital PAM sequences in the presence of intersymbol interference, detection of continuous-phase digital FSK, and text recognition.

G. David Forney, Jr. received the B.S.E. degree with highest honors from Princeton University, Princeton N.J., in 1961, and the M.S. and ScD. degrees from the Massachusetts Institute of Technology, Cambridge, in 1963 and 1965, respectively. Since 1965 he has been with Codex Corporation, Newton, Mass., where he is Director of Research. Dr. Farney has been chairman of the Boston Chapter of the G-IT, and a member of the American Association for the Advancement of Science, Phi Beta Kappa, and Sigma Xi. He is presently an Assistant Professor at Stanford University.



The MT&T Group, jointly with the Elec. Dev. Group, will hear about the Academic year recently spent in Israel by Dr. Leo Young Stanford Research Institute. Dr. Young will illustrate his talk with slides, and comment on the role of IEEE in these countries. Dr. Young was visiting Professor at Israel Inst. of Technology.

The meeting will be held at SRI Auditorium, Bldg. #44, Laurel St. entrance. Dinner will be held 6:00 pm, Rick's Swiss Chalet. Reservations to Don Messner 321-5135.

Dr. Young received his B.A. and M.A. degrees from Univ. of Cambridge, England, and M.S. and Dr. Eng. degrees from Johns Hopkins.

He has had more than one hundred papers and technical contributions published, together with over 18 patent assignments. He is author of two books, and co-author of another. He was awarded the IEEE Microwave Prize in 1963.

Dr. Young is a Fellow of IEEE, and was chairman of the Administrative Committee of the MT&T Group for 1969. He now is Director of IEEE Div. 4.

Golden Gate Subsection to hear Engineering Story of Rotary Engine and Mazda Auto

Mr. Cecil A. Whitebone, President and Mr. Tom Zumwalt, Service Manager, Adams Whitebone Mazda Company, San Francisco, will discuss the engineering aspects of the Mazda Rotary Engine for the Golden Gate Subsection at a luncheon meeting 12:00 noon, Tuesday October 19.

Is the German-invented rotary engine, now being manufactured in Japan and used in the Mazda automobile, potentially a cleaner, more efficient and more reliable power plant for mass-produced automobiles than the conventional piston engine.

If this timely question is on your mind and if you have others related to it, this meeting will give you an opportunity to get first-hand answers.

The rotary engine has a standard auto cycle, but operates with a triangular rotor spinning inside a circular housing instead of pistons and cylinders. The rotor controls fuel intake and exhaust directly, as well as providing the main drive. The engine has a higher horsepower/weight ratio and far fewer parts than a piston engine.

The U.C. Department of Mechanical Engineering in Berkeley recently received one of these engines from the Japanese manufacturer for a three year program of research on its performance and for instructional use.

The luncheon will begin promptly at noon to allow as much time as possible for a question and answer session. See calendar for details.

AEROSPACE and ELECTRONIC SYSTEMS GROUP to TOUR PACIFIC TELEPHONE COMMUNICATIONS CENTER

The Aerospace and Electronics systems Group will feature a tour of the Pacific Telephone Communications Center in San Francisco on October 21, 1971 at 7:30 p.m. The Long Lines carrier and coaxial transmission equipment, multiplex, decoding and automatic test apparatus, solid-state electronic switching, and associated equipment will be seen. Because of classified programs, all

tour members are required to be U.S. citizens, and will be escorted by staff members of the Pacific Telephone Company Public Relations and Engineering Departments.

Tour is limited to 40 persons. For the necessary reservations call: Pat Hoppe, 326-4350, Ext. 6143 before October 12.

**Computer Engineering Society to
hear "Locality of Reference"
as a Fundamental Property of
Human Behavior**

The Computer Group will hear Dr. Peter J. Denning on Wednesday, October 20 describing the concept of "Locality of Reference And The Reasons It Is a Fundamental Property Of Program Behavior." Some properties of the 'working set model' for program behavior which estimates program 'localities' and implications to multiprogrammed memory management will be presented. The talk will emphasize the programmer's view of these concepts, and will give some guidelines for eliciting good performance from their programs in virtual memory environments.

Dr. Denning received his B.E.E. from Manhattan College in 1964. S.M., M.I.T., 1965. Ph.D., M.I.T., 1968. Assistant Professor of Electrical Engineering at Princeton University 1968. Research interests: computer system modeling and analysis; operating systems; parallel computation and concurrent systems; Research papers topics include: shortest-access-time-first scheduling of rotating storage devices; working set model for program behavior; thrashing; virtual memory; precedence grammars and parsing methods. Co-author of forthcoming books; Computer Operating Systems Modeling and Analysis; Principles of Computer System Organization; Theoretical Models For Computation.

Professional activities include: Chairman ACM Special Interest Group On Operating Systems (1969-1970); Board of Directors, ACM Special Interest Group On Computer Science Education (1970 -); Chairman, ACM Board On Special Interest Groups and Committees (1970 -); Chairman, CO-SINE Task Force on Undergraduate Course in Operating Systems Principles (1970 - 1971); Advisory Panel NSF Office of Computing Activity (1971 -); Sector Editor, Computing Reviews.

**IEEE Reliability Group to hear story of
SLAC Reliability Requirements Oct. 13.**



The Reliability Group has selected a local landmark (a two-mile mark?), the Stanford Linear Accelerator, for their first meeting. The Speaker will be Kurt Breymayer, a member of the Instrumentation and Control Group of the Stanford Linear Accelerator Center. The Center operates and maintains the accelerator under a contract with the Atomic Energy Commission.

The title of his talk is "Reliability Planning For a Two-mile Accelerator." Having been associated with the accelerator since the initial stages Mr. Breymayer will discuss the integral nature of the system re-

liability planning that went into the accelerator design. The overall system and its usage will be described, introductory to a discussion of the different types of reliability considerations that each major subsystem required. An aspect of the system design and operation to be covered is the effect of failure of each subsystem.

Mr. Breymayer received his Engineer degree in Germany from the Dresden Technical University, majoring in electronics. After working at Siemens he emigrated to Canada in 1951 and performed radio communication systems engineering for Marconi and then Canadian General Electric. He moved to the United States in 1957, joining Lenkurt Electric in San Carlos, and in 1959 began his association with the accelerator project.

Those not members of the Reliability Group or the IEEE are welcome to attend the meeting and no reservation is needed. A dinner will be held at the Stanford View Restaurant. Call Dick Cornwell at 966-3877 if you plan to attend the dinner.

Hunters Point Shipyard to be toured by Power Engineering Society

A tour of facilities at the San Francisco Naval Shipyard (Hunters Point) similar to last Year's successful tour has been arranged by San Francisco Chapter of IEEE Power Engineering Society for the October 12, 1971 meeting. The last year's tour included a complete inspection of the aircraft carrier, U.S.S. Midway. This year the ship to be inspected could not be confirmed at the time of this writing. However, a major carrier is in the dry dock for the remainder of the year and we expect to visit this ship. Watch for the Power Engineering Society monthly flier for complete and up-to-date details.

The tour will be preceded by a social hour at the San Francisco engineers Club commencing at 5:15 PM, with dinner at 6:00 PM. All people making the trip will board chartered buses leaving from the Engineers Club, at Pine and Sansome, at 7:00 PM. The buses are scheduled to return to the Engineers Club at about 10:00 PM. All tour members must plan on traveling on the chartered buses as admission to the shipyard, etc., will be handled while traveling on the buses. Cost of the bus transportation will be \$1.00 per person, round trip, payable when boarding.

The tour will be limited to the first 100 calling or mailing reservations to Mr. J.B. MacLean, c/o Westinghouse Electric Corp., One Maritime Plaza, San Francisco, California 94111, telephone (415) 445-2251. Ladies are welcome. The Navy has made the suggestion that the trip will be more comfortable if slacks and flat-heeled shoes are worn.

A NOTE FROM THE EDITOR

Your Editor thanks you for efforts to present exciting cover pictures for the GRID, in fact so many as to make choices difficult. Please keep it up. In maintaining the GRID to 8 pages, we are hard pressed to get all your copy included, so we are required to edit the longer articles. Please make your Meeting Stories concise and to the point.

OCTOBER 1971

"Application of Systems Analysis for Diagnosing Latent Diseases" Subject of Joint Meeting for Systems, Man and Cybernetics and Bio-Medical Electronics Groups



Dr. John H. Frenster, M.D., of the Stanford University Medical School, will address a joint meeting of the Systems, Man, and Cybernetics and the Bio-Medical Electronics Groups on the topic, "The Application of Systems Analysis for Diagnosing Latent Disease" at SRI on October 11.

Many human physiological systems of clinical interest can be viewed as throughput or substrate-flow systems. Such systems are characterized by a flow of matter, energy, or information that is first presented to the system as an input load, then undergoes some characteristic transformation within the system, and finally emerges as a transformed output.

Latent disease states can be distinguished from normal (non-diseased) states by the clinical use of load-tolerance perturbation, i.e., under basal conditions a well-defined input load is imposed in order to perturb the particular system at a rate just sufficient to lengthen the basal waiting line to its pathologic boundary value.

In latent disease, the load-tolerance of the affected system is somewhat reduced compared to that in normal patients. Furthermore, as latent disease progresses to overt disease, the load-tolerance of the affected system declines even more. The clinical use of load-tolerance perturbation analysis permits a quantitative measure of predilection to disease within a minimally-affected system, and facilitates diagnosis in its latent stage before the onset of overt symptoms.

Prior to his appointment at Stanford, Dr. Frenster has worked at the University of Illinois and the Rockefeller Institute in New York City. In addition to his work on the application of systems techniques to medicine, his research interests include cancer, cell biology, and hematology.

Industrial Electronics and Control Instrumentation Group to Hear About "ERROR DETECTION IN DATA ACQUISITION AND SUPERVISORY CONTROL SYSTEMS"



With the increasing use of digital communications for acquisition of data from remote locations and the supervisory control of more complex and more critical processes, the protection of data messages from errors induced on the communications channel becomes increasingly important.

Following a brief introduction into data communication techniques and the different types of errors caused by noise conditions, a survey of the properties of error control techniques will be presented. The performance of the two coding techniques utilized most often for data acquisition and supervisory control systems, geometric codes and BCH codes will then be described in detail for both random error and burst error environments.

Dennis J. Gaushell is Manager, Systems Analysis for Control System Industries, 2920 San Ysidro Way, Santa Clara, California. Mr. Gaushell received an MSEE and Engineer's Degree from Stanford University in 1967, and 1970, respectively.

GRID - 7

IGA Group to Hear Story on Movable Rock Crushing Plants



Mr. Herbert L. Gaskin, Jr., Chief Engineer of Pacific Cement and Aggregates' Division of Lone Star Industries, Inc., will present an illustrated talk giving a general description of the Bonny Doon Project. Particular attention to drive selection, remote control system, sequence shutdown, remote selection control and safety devices employed, The crushing plants and conveyor system together with the main and unit substations and power distribution system will be described.

Dinner at 6:30 pm. program at 7:30, Marconi's Restaurant, San Francisco.

IDEAS FOR IMPROVING SECTION MEETINGS.

This item, now is found in two colors in the "Inside IEEE" part of SPECTRUM. Don't overlook this source of ideas. SPECTRUM is received by all IEEE members in the world. Exchange of ideas should be a two-way street.

Engineering Management

"Degrees at a Distance"



The School of Engineering at Stanford University will Play host to the Professional Group on Engineering Management at their meeting on Wednesday, October 20. The meeting will begin promptly at 8:00 p.m. in Room 191 of the Skilling Building at Stanford. (See map)

Kenneth S. Down, Administrative Manager, and Martin Grushkin, Chief Engineer of the Stanford Instructional Television Network will discuss the many novel features of the system and demonstrate its unique capabilities. An inspection and tour of the facilities will follow.

Latest estimates indicate that the technological half-life of the recent engineering graduate is only nine years! To counter the effects of technical obsolescence, engineering managers encourage their employees to keep up with the rapidly-increasing volume of new knowledge by urging membership in technical societies, providing tuition refunds to promote continuance of education, furnishing facilities for in-house training, and participating in such plans as the Stanford Honors Cooperative Program.

As an extension of the latter program Stanford telecasts some of its regular graduate engineering courses to students located in their plants throughout the Bay Area. Classes are transmitted "live" with resident students in the originating classroom. Students in remote classrooms can communicate with anyone in the class via audio response links. A question or comment from a student at any receiving location is heard in the Stanford classroom as well as at all remote receiving terminals.

To utilize the installation in the early morning and evening hours when not required for Stanford courses, participating companies and organizations have formed a non-profit corporation, the Association for Continuing Education (ACE). ACE uses the Stanford facilities to conduct a large-scale program of academic and non-academic courses. Charles M. Davis, General Manager of ACE will discuss the pioneering concepts of the Association and how it aids in providing continuing and extension education for employees of many local firms.

CIRCUIT THEORY GROUP OFFERS ONE-DAY COURSES

The Circuit Theory Group is planning to offer a series of one-day courses on current topics in solid state circuits, during the 1971-72 year. These courses are organized and sponsored jointly with the Bay Area G-CT, and the IEEE Educational Activities Board, and are intended to familiarize the practicing engineer with the recent advances in various

fields of solid state circuit design and engineering.

The first one-day course of the series is on Active Filters. It is organized by Prof. S.K. Mitra of the University of California, Davis, and is scheduled to be held on Saturday, November 20, at Stanford Linear Accelerator Center (SLAC) auditorium.

The course is open to both the IEEE members and the non-members alike.

For additional information, or suggestions, concerning the Circuit Theory Group one-day course program, write or call Dr. Alan B. Grebene at Exar-Integrated Systems, Inc., 733 N. Pastoria Ave., Sunnyvale, California, 94086; (408) 732-7970.

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