

EDITOR'S PROFILE of this issue

from a historical perspective ...

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

November, 1973:

Cover: Coit Tower shines above San Francisco Bay. Page 2 lists four upcoming conferences being held in S.F.

Page 8: Ari (Harry) Kurtzig of ISS heads up a panel to discuss a recent conference held in Boston covering magnetic bubble technology (something I was developing at the time).

Page 8: USAF Major Winona Klare talks about "Women Engineers in Management", a rather new idea to most engineers at the time.



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



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

Grid

NOVEMBER 1973



NOVEMBER 1973

Published monthly except June, July,
August and December by San Francisco Section
Institute of Electrical and Electronics Engineers

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San Francisco

THE COVER STORY

San Francisco plays host to many IEEE General Meetings, Technical Conferences and Committee Meetings during the year. Important future Meetings scheduled are:

- IEEE Nuclear Power Symposium
November 14-16, 1973
Sheraton Palace Hotel
- IEEE Nuclear Science Symposium
November 14-16, 1973
Sheraton Palace Hotel
- International Symposium on
Circuits and Systems
April 21-24, 1974
Sir Francis Drake Hotel
- International Symposium on
Electromagnetic Compatibility
July 16-18, 1974
Hilton Hotel

EDITOR'S COMMENT

Your editor regrets having to give some instructions that were published in October. If you do not have a copy of the instructions passed out at the 19 organizational meeting, then ask Jean Helmke to send one. Phone 327-6622

Some important things to remember:

- Do not transmit meeting notices to speakers without doing so yourself, if necessary.
- Meeting notices should be 150-200 words, or less, with a brief announcement of tutorial description of the meeting. It is more important than the speaker's work experience. Use short, easy-to-read characters.

By phone, and a
that big "Thank You"
ers who send in c
ie, clean copy.

GRID CONTRIBUTOR PLEASE NOTE

There will be no GRID publication in December.

The Section Office will be closed for vacation from December 24 to January 1. Reopen Jan. 2.

Announcements for the January issue should be in the office by Nov. 15.

Announcements for the February issue should be in the office no later than January 2.

ZWORYKIN PRIZE AWARD TO ALBERT MACOVSKI

Dr. Albert Macovski, Stanford Research Institute, presently on leave to serve as a Research Associate at Stanford University, has received the Vladimir K. Zworykin Prize Award for 1973. The citation reads: "For contribution to single tube encoded color cameras and color television receiving circuits." Dr. Macovski received the award certificate and \$1000 prize at the recent Broadcasting Group Annual Broadcast Symposium in Washington, D.C.

INTERNATIONAL SYMPOSIUM ELECTROMAGNETIC COMPATIBILITY

San Francisco, July 16-18, 1974

CALL FOR PAPERS

Theme - "EMC Spans the Spectrum". Summaries of potential papers, must be submitted by January 15, 1973. Acceptance by Jan. 15, 1973. Contact Alan K. Johnson, 439 Mt. Sunnyvale, Calif. 94086

Award was established by
Hewlett-Packard Co. in 1969, and is
presented annually by the electrical
engineering division of the American
Society for Engineering Education. The
award consists of \$1,000 in cash, an
engraved gold medal, a bronze replica,
and a scroll.

MEETING CALENDAR

AEROSPACE & ELECTRONIC SYSTEMS & ELECTROMAGNETIC COMPATIBILITY
NOV. 15

Story on Page 4

JOINT MEETING: NEW METHODS OF SPURIOUS FREQUENCY ANALYSIS. Wayne T. Picciano, Engrg. Specialist, Philco Ford WDL.

NOV. 15, Thursday, 8:00 PM, Philco Ford Auditorium, 3825 Fabian Way, Palo Alto. Dinner: 6:30 PM, Rickey's Hyatt House, 4219 El Camino Real, Palo Alto. Reservations: (415) 326-4350 x 4769 or x 5087 by Nov. 14th.

ANTENNAS & PROPAGATION
NOV. 8

Story on Page 4

GEOMETRIC DIFFRACTION: A POWERFUL TOOL FOR SOLVING PRACTICAL PROBLEMS. Dr. Robert C. Hansen, Consulting Engineer, Encino, Calif.

NOV. 8, Thursday, 8:00 PM, LMSC Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto. Cocktails: 5:30 and dinner 6:15 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. No reservations required.

COMMUNICATIONS SOCIETY
NOV. 13

Story on Page 8

THE 84A SINGLE CHANNEL STATION CARRIER SYSTEM. James A. Stewart, GTE Lenkurt, San Carlos.

NOV. 13, Tuesday, 8:00 PM, Rickey's Hyatt House, 4219 El Camino Real, Palo Alto. Dinner: 6:30 PM in the Garden Room. Reservations: Lee Stephens (415) 961-3535 x 213 by Nov. 12th.

COMPUTER SOCIETY
NOV. 14

Story on Page 6

MICROCOMPUTERS, ENGINEERS AND PROGRAMMERS. Manuel R. Lemas and Raymond M. Holt, Compata, Inc.

NOV. 14, Wednesday, 8:00 PM, Skilling Auditorium, Stanford University. Dinner: 6:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Reservations: Pat Rubin (415) 965-6349 by noon Nov. 14th.

EAST BAY SUBSECTION
NOV. 12

Story on Page 5

TOUR OF SUTRO TV TOWER IN SAN FRANCISCO. Harry Jacobs will conduct the tour. Limited to 30 persons.

NOV. 12, Monday, 7:30 PM, Mt. Sutro Tower. See story for directions. Also directions will be given when reservations are made. Reservations are required. Call James St. Arnaud, (415) 542-4974 by Nov. 9th.

ELECTRON DEVICES
NOV. 20

Story on Page 4

SO YOU'RE THINKING OF A SPIN-OFF? Dr. James Hobart, President, Coherent Radiation.

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

ENGINEERING MANAGEMENT
NOV. 13

Story on Page 8

WOMEN ENGINEERS IN MANAGEMENT. Major Winona Klare, Field Test Force Director Satellites, U.S.A.F.

NOV. 13, Tuesday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Cocktails: 6:00 PM and dinner at 6:30 PM. Reservations: Mrs. Scott (408) 243-3600 x 365.

ENGINEERING IN MEDICINE & BIOLOGY
NOV. 13

Story on Page 4

SEMINAR ON ULTRASONICS, DE-COMPRESSION SICKNESS AND LIQUID BREATHING. Dr. R. Stuart Mackay, Professor of Surgery and Biology at Boston University.

NOV. 13, Tuesday, 8:00 PM, Airport Plaza Hotel, 101 Bayshore Freeway, Millbrae. Dinner: 6:00 PM, Ambassadors Room. Reservations: Karin Carlson (408) 739-8880 x 322 by Nov. 12th.

ENGINEERING IN MEDICINE & BIOLOGY
DEC. 11

Story on Page 4

CLINICAL LAB EQUIPMENT: PAST PRESENT AND FUTURE. H.A. Lorberbaum, M.D., Pathologist, Community Hospital, Los Gatos.

DEC. 11, Tuesday, 8:00 PM, Airport Plaza Hotel, 101 Bayshore Freeway, Millbrae. Dinner: 6:00 PM, Ambassadors Room. Reservations: Karin Carlson (408) 739-8880 x 322 by Dec. 10th.

GOLDEN GATE SUBSECTION
NOV. 20

Story on Page 8

METEOROLOGICAL MEASUREMENTS IN THE 70's. Robert Wademan, Manager, Weathermeasure Corp.

NOV. 20, Tuesday, 12 noon, PG&E, 3rd floor Cafeteria Room 303, 77 Beale St., San Francisco. Proceed to 3rd floor, select meal from Cafeteria, proceed to Room 303 for lunch and meeting. Reservations: Art Wells (415) 467-1880.

INDUSTRIAL ELECTRONICS & CONTROL INSTRUMENTATION/ INSTRUMENTATION MEASUREMENTS

Story on Page 4

DIGITAL INTERFACE BUS SIMPLIFIES INSTRUMENTS SYSTEMS. Dave Ricci, Development Engineer, Hewlett-Packard Co. Santa Clara Div.

NOV. 20, Tuesday, 8:00 PM, Hewlett-Packard Auditorium, 5301 Stevens Creek Blvd., Santa Clara. No dinner. Information: Terry Jackson (415) 8843-2740 x 5831.

INFORMATION THEORY
NOV. 19

NOV. 19, Monday, 8:30 PM, SRI Conference Room B, Bldg. 1, 333 Ravenswood Ave., Menlo Park. Dinner: 6:15 PM, The Winery, El Camino at California Ave. Palo Alto. Reservations: D. Wilson (415) 966-2595 or Mrs. J. Brewer (415) 966-3286 by Nov. 19th.

MAGNETICS
NOV. 29

Story on Page 8

SOME THOUGHTS ON CODING THEORY. Dr. Elwyn Berlekamp, Professor at UC Berkeley.

NOV. 29, Thursday, 8:00 PM, Mahogany Room, Hewlett-Packard Co., 5301 Stevens Creek Blvd. Santa Clara. No dinner.

MICROWAVE THEORY & TECHNIQUES/CIRCUITS & SYSTEMS SOCIETY
NOV. 10

REVIEW OF 3 RECENT CONFERENCES: MMM, Magnetic Recording and International Magnetism Conferences. John Mallinson, Ampex Research, Prof. Robert L. White, Stanford, and a panel chaired by Harry Kurtzig of ISS.

NOV. 10, Saturday, 9 AM to 4 PM, SLAC Auditorium, 2575 Sand Hill Road, Menlo Park. See insert for registration and other information, or call Don Messner (408) 732-2710 x 2365.

NUCLEAR & PLASMA SCIENCES SOCIETY
NOV. 17

Story on Page 7

One-Day SEMINAR: MODERN MICROWAVE CIRCUIT DESIGN: THEORY AND PRACTICE. PHASE II.

NOV. 17, Saturday, 8:00 to 8:45 AM for registration; 8:45 to 5:00 PM seminar. For more information call Mrs. L. Burch (415) 854-3300 x 2401.

NOV. 17, Saturday, 8:00 to 8:45 AM for registration; 8:45 to 5:00 PM seminar. For more information call Mrs. L. Burch (415) 854-3300 x 2401.

POWER ENGINEERING
NOV. 13

Story on Page 5

SUBSYNCHRONOUS OSCILLATIONS IN ELECTRIC POWER SYSTEMS. Dr. Lee A. Kilgore, Consultant-Power Systems Planning, Westinghouse, Pittsburgh, Pa.; Wayne R. Schmus, Chief Planning Engineer, Generation, So. Calif. Edison Co., Los Angeles.

NOV. 13, Tuesday, 7:00 PM, PG&E Co., 3rd floor, 77 Beale St., San Francisco. Dinner: 6:00 PM, same place. Dinner price: \$4.25. Reservations: Molly Milan (415) 445-2227 by Nov. 12th.

RELIABILITY
NOV. 14

Story on Page 4

DIGITAL ELECTRONIC WATCHES - SANTA CLARA VALLEY'S LATEST HOT MARKET ITEM? Dr. Dan Peters, Mgr., Systems Product Development, CAL-TEX Semiconductors, Inc. Santa Clara.

NOV. 14, Wednesday, 8:00 PM, Stanford University Physics Lecture Hall - PH 104. Dinner: 6:30 PM, Stanford View Restaurant, 1921 El Camino Real, Palo Alto. Happy Hour at 6 PM. Reservations: Phil Guillot (408) 742-3509 by Nov. 13th.

SANTA CLARA VALLEY SUBSECTION
NOV. 14

Story on Page 6

TOUR OF THE NASA AMES RESEARCH CENTER'S FACILITIES. Brief orientation lecture followed by visit to the Simulation Science Laboratory (Aircraft and Spacecraft flight simulators), the flight operations hanger, and the world's largest wind tunnel.

NOV. 14, Wednesday, 12:45 PM, NASA Ames Center. Please check in at Gate 18. You will be directed to the tour's starting point. See map with story. Tour limited to 40 persons. Call either Gerry Embray (408) 291-5380 or Eve Bullerduck (408) 291-2129 by Nov. 12th.

SYSTEMS, MAN & CYBERNETICS
NOV. 14

Story on Page 8

IS THE ECONOMY REALLY HEATING UP? Dr. Gerry Andeen, SRI.

NOV. 14, Wednesday, 8:00 PM, SRI, Conference Room B, Bldg. 1, 333 Ravenswood Ave., Menlo Park. Dinner: 6:15 PM, Menlo House, 1850 El Camino Real, Menlo Park. Reservations: Section office (415) 327-6622.

VEHICULAR TECHNOLOGY
NOV. 19

THE FLIGHT OF APOLLO 17 - NASA FILM

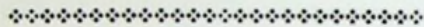
NOV. 19, Monday, 8:00 PM, Belmont Holiday Inn, Marine World Parkway and Bayshore. Cocktails: 6:30 and dinner at 7:00 PM. Reservations: Karen or Bonnie at (415) 349-3111.

MINICOMPUTER WORKSHOP at the University of Santa Clara, December 4, 5 and 6. See page 5.

**AES - EMC JOINT MEETING
NEW METHOD OF SPURIOUS
FREQUENCY ANALYSIS**

SPURTRAK, a basic language time-share computer program, enables receiver, transmitter and instrument designers to devise optimum frequency schemes for frequency conversion with the minimum number of spurious responses.

Wayne T. Picciano, Engineering Specialist in System Design at Philco-Ford, will present this interesting subject. If you have fought the problem of silencing birdies, you will enjoy this presentation.



**EMB - CLINICAL LAB EQUIPMENT
PAST, PRESENT AND FUTURE**

Dr. H.A. Lorberbaum, M.D., Pathologist of the Saratoga-Los Gatos Community Hospital in Los Gatos, Calif. will talk about the Clinical Lab equipment - past, present and future. He will also express some frank opinions as to what the Design Engineer can do for him, and what kind of new products he wants to see in the market.

This meeting will be held at the Airport Plaza Hotel, 101 Bayshore Freeway, Milbrae, Calif. No host dinner at 6:00 p.m.



**EMB - ULTRASONICS,
DECOMPRESSION SICKNESS
AND LIQUID BREATHING**

Decompression sickness is a serious medical problem to tunnel workers, divers, and airplane pilots. Because of this fact, researchers have been trying to find a solution to this problem. One of the techniques used for the investigation of decompression sickness is the use of Ultrasound, a sonar system using pulses of high frequency sound.

A brief discussion of the theory of decompression sickness and a mathematical model of a biological system will be presented. In addition, two short movies will be shown to illustrate ultrasound system at work. This talk will be presented by Dr. R. Sturat Mackay, Professor of Surgery and Biology at the Boston University. Dr. Mackay is one of the world pioneers in Biomedical Engineering.

**ED - "SO YOUR THINKING
OF A SPIN-OFF"**

There are few technical people in the Bay Area that haven't at least once thought of starting their own company. The reasons money, freedom, being your own boss, the chance to "do it right". How do you decide to do it? How much money will you need? Where will it come from? How do you convince them to give it to you? How much of your company will you have to give away? What products will you make? How will you sell them? What will you be worth if you succeed? Or, if you fail? Should you plan on "going public"? How do you find new products? And how fast do the old ones die? How do you continue to grow? These and many more questions (and maybe even some answers) will be discussed.

Dr. James L. Hobart, President, Coherent Radiation, obtained his Ph.D. in physics from the University of Michigan in 1962. From 1962 to 1966 he was employed by two small laser companies, before joining in the founding of Coherent Radiation in 1966. Coherent has grown since inception to a current sales volume of about \$13 million.



**REL - DIGITAL
ELECTRONIC WATCHES**

Digital electronic watches are one of the newest products to hit the Santa Clara Valley semi-conductor industry. Dr. Peters will discuss the elements of the watch, its product development, and its impact in the market. The technical positions of the Swiss watch approach versus our US technology will also be presented.

Dr. Peters received his PhD in Solid State Electronics from Stanford University. Before assuming his present position as Manager of Systems Product Development at CAL-TEX, he served as MOS Integrated Circuit Design Manager at Siliconics. His previous affiliation was Stanford Research Institute where he conducted Staff Research assignments in Solid State Electronics.

**AP - GEOMETRIC DIFFRACTION
A POWERFUL TOOL FOR
SOLVING PRACTICAL PROBLEMS**

The Geometrical Theory of Diffraction is one of the three most important practical antenna discoveries since World War II. This tutorial talk on GTD explains how it works from the user's viewpoint and ways of using it in solving practical antenna problems. How GTD makes geometric optics fields continuous across shadow boundaries, and where it fits with other techniques such as physical optics will be discussed. Various types of diffraction coefficients will be covered, along with the GTD difficulty at a caustic. Practical problems include monopole on an irregular ground plane or on a metallic body, reflector antenna including subreflector, beam waveguide for Cassegrain feed, compact range design, and slots on a cylinder. Finally ways of combining GTD with Moment Methods, and the advantages of so doing will be discussed.

Dr. Robert C. Hansen, a G-AP National Lecturer, is well known for his many accomplishments and publications in the field of electromagnetics, as well as for his numerous professional activities.



**IECI & IM - DIGITAL
INTERFACE BUS SIMPLIFIES
INSTRUMENTATION SYSTEMS**

A new generation of intelligent instruments are emerging, capable of communicating among themselves through a "daisy-chain" single interconnecting cable. This new approach contrasts with a dedicated system where information flow is unidirectional from all instruments into a central processor. The new arrangement primarily is for "once only" test set-ups.

The new system makes use of a Digital Data Bus, common through the cables, not hard-wired to the rack. The bus has bidirectional data flow, is ASCII compatible, with three-wire handshake control.

Mr. Dave Ricci, development engineer with Hewlett Packard, who is responsible for this interesting application, received his BSEE from Cal Poly, and his MS from UC Berkeley. He will describe the bus design and operation, and some calculator based system applications. A small test system using a programmed voltage source and counter to test VCO's will be operable.

**PES - JOINT MEETING WITH
SAN FRANCISCO ELECTRIC CLUB
JANUARY 14, 1974**

Dr. Chauncey Starr, President of The Electric Power Research Institute, will speak at a joint luncheon meeting of the Power Engineering Society and the Electric Club of San Francisco on Monday, January 14, 1974. Mark this date on your calendar now and watch for details in the January GRID.



**EBSS - TO TOUR MT. SUTRO
TV TOWER**

Now predominating the San Francisco skyline, the new 977 foot Television Transmitting Tower on Mount Sutro serves five TV and four FM Radio Stations. Mr. Harry Jacobs, Director of Engineering, Mr. Sutro, Inc., will conduct the tour for the East Bay Subsection on November 12th, at 7:30 p.m. In addition, Mrs. Olympia Byrne, a Video Engineer for P.T.&T., will show the Telephone Company terminals which are the studio-to-transmitter links used by the broadcasting station. The tour will be limited so make your reservations early; see the Calendar.



**VOLUNTEERS FOR CAREER
GUIDANCE COUNCILING**

The East Bay Joint Engineering Council is calling for volunteer counsellors for their Career Guidance program. This is a very worthwhile effort being made in Cooperation with 130 High Schools in the Bay Area. The counselling involves informing students what Engineering is all about and how it contributes to society.

If you are interested in working with young people contact Pete Fowler, 6633 Colton Blvd., Oakland CA 94611. Telephone 415-339-1712.

**PES - HOW PROBLEM OF TURBINE GENERATOR
SHAFT BREAKAGE WAS SOLVED**



Dr. Lee A. Kilgore, Consultant, Power Systems Planning, Westinghouse, East Pittsburgh, Pa., and Mr. Wayne R. Schmus, Chief Planning Engineer, Generation, Southern California Edison Co., Los Angeles, will speak on the subject "Subsynchronous Oscillations in Electric Power Systems" at a dinner meeting Tuesday, November 13, 1973.

The importance and magnitude of this technical problem can be judged from

the fact that the shaft of a 483 MVA generator at Southern California Edison's Mohave plant failed not once but twice as a result of it. Dr. Kilgore and Mr. Schmus will relate how the problem was found, analyzed and solved.

The dinner and meeting will be held in the 3rd Floor Dining Room of Pacific Gas and Electric Co., 77 Beale St., San Francisco, starting at 6:00 p.m. Dinner price -- \$4.25. For reservations phone Molly Milan, 445-2227 by November 12.



**SEVENTH ANNUAL ASILOMAR
CONFERENCE ON CIRCUITS,
SYSTEMS, AND COMPUTERS**

November 27 - 29, 1973
Asilomar Hotel, Pacific Grove, Cal.
Information: Dr. John Choma, Jr.
Hewlett Packard, Santa Clara 95050



**IEE COMPUTER SYSTEMS
AND
TECHNOLOGY CONFERENCE**

IEEE - London; Oct. 29-Nov. 1, 1974

Call for Papers-Deadline Jan. 7 '74

Subjects: Systems Hardware; Systems Structure; Education and Retraining; Communications Systems; System Software; Computer Systems.

Information: IEE Conference Dept.
Savoy Place, London WC2R OBL

C - MICRO COMPUTER WORKSHOP

What: A three-day Microcomputer Workshop

When: December 4, 5, and 6

Where: University of Santa Clara, Division of Continuing Ed.

Cost: IEEE and ACM Members \$275; Non-members \$300 (Includes registration for all three days, notes, lunches, coffee and hands-on equipment usage).

Content: Systems descriptions of available and forthcoming micro-processor devices.
Programming techniques
System design practices
Development tools

Instructors: Representatives from leading semiconductor manufacturers and OEM users

Note: Early registration will assure a space in this very popular workshop.

Additional information:

Jack Peterson
Division of Continuing Education
University of Santa Clara
95053 Phone: 984-4518

The Santa Clara Valley Subsection will tour NASA-Ames Research Center on November 14, 1973. The tour will begin at Gate 18 at 12:45 PM and will end at about 2:45 PM.

The Ames Research Center, located some forty miles south of San Francisco, is one to ten major NASA field installations concerned with the United States space program. The Center, adjacent to the U.S. Naval Air Station, Moffett Field, is 365 acres in area and has 50 major structural facilities. Included are 34 laboratory facilities of which 17 are special purpose wind tunnels and five are flight simulation complexes.

Current emphasis in aeronautics at Ames is on Short Take Off and Landing (STOL) and Vertical Take Off and Landing (VTOL) technology. STOL and VTOL research programs range from conceptual design through wind tunnel testing

and ground-based flight simulation to flight research on actual aircraft.

Ames had management responsibility for the Pioneer series spacecraft, four of which are orbiting the sun for study of solar phenomena. A fifth spacecraft, representing an advance in Pioneer technology, is on a 620 million mile journey to Jupiter for the first close look at the giant planet.

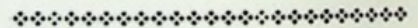
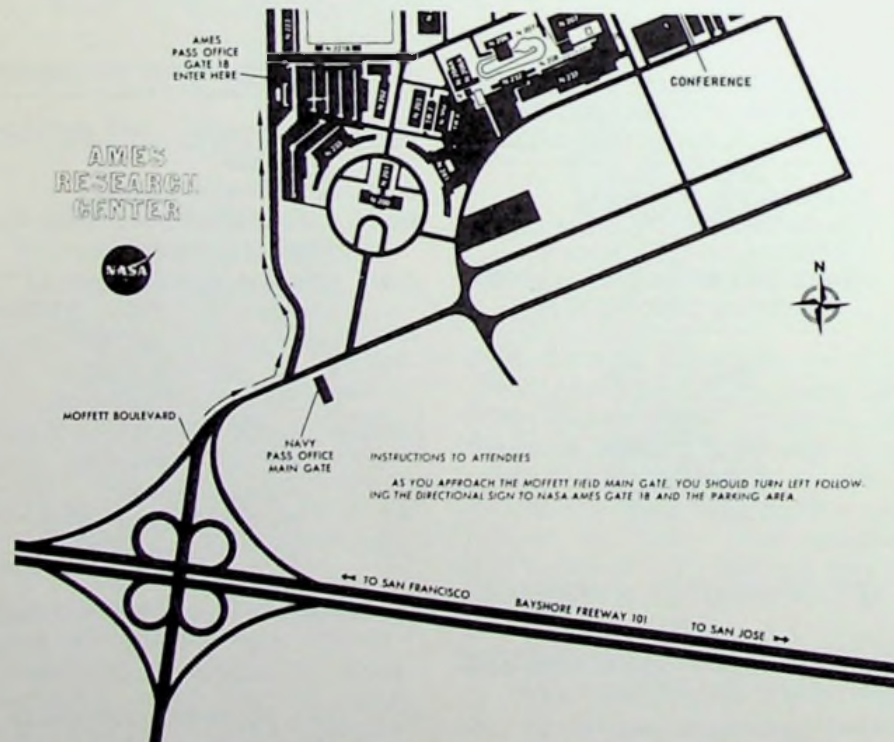
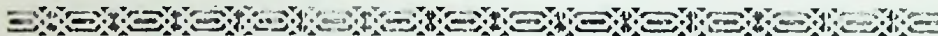
Ames has the biggest, the fastest and most unique combination of wind tunnels of any known research facility in the world. The largest has a test chamber, 40X80 feet, large enough to accept full scale aircraft or near full scale models. Another uses a common fan system to circulate air in three separate tunnels to achieve specific speeds and altitudes. Others test aerodynamic properties of models in free flight at speeds up to 30,000 miles per hour.

The recent emergence of MOS-LSI microcomputers has caused engineers and programmers to look at system development from a different viewpoint. This talk looks at the "new" microcomputers and presents the relationships each will have to each other during product development. A brief look at current microcomputers will also be presented.

Mr. Manual R. Lemas is a staff consultant with Compata Incorporated. Mr. Lemas has sixteen years in the programming field with experience in design and implementation of system software, operating systems, test and diagnostics, design automation, numerical control, and simulation programs.

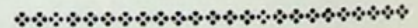
Mr. Lemas received a BS degree in Mathematics from Arizona State University in 1961 and is attending the Graduate School of Business at the University of Santa Clara.

Mr. Raymond M. Holt received a BS degree in Electronic Engineering from Cal Poly, Pomona in 1968. He has completed graduate courses in computer design at the University of Southern California and is participating in the Computer Science Masters Degree program at the University of Santa Clara.



**1973 NINETEENTH ANNUAL
CONFERENCE ON MAGNETISM
AND MAGNETIC MATERIALS**

Statler Hilton Hotel, Boston
November 23-26, 1973



**1974 IEEE INTERNATIONAL
CONFERENCE ON
COMMUNICATIONS ICC 74
CALL FOR PAPERS**

Leamington Hotel, Minneapolis
June 17-19, 1974

Five clear copies of both paper and one page abstract to:

Dr. M. S. Ulstad, ICC74
P.O. Box 35366, Minneapolis 55435



MODERN MICROWAVE CIRCUIT DESIGN:
THEORY AND PRACTICE;
PART II
Nov. 10 1973
Main Auditorium
Stanford Linear Accelerator Center
2575 Sand Hill Rd.
Palo Alto, California

Morning COURSE SCHEDULE

1. Mapping Techniques TILLMAN
(Generalized Smith-Chart, Oscillator and
Amplifier mapping, plotting techniques.)

Coffee

2. Optimization of Microwave Circuits... BESSER
(Search strategies for low-noise amplifiers,
matching networks, oscillators, filters,
linear models for non-linear circuits.)

Lunch

(At Slac's Cafeteria) cost included in
Registration Fee

Afternoon

3. Linear Amplifiers MARSHALL
(Design for maximum gain, band-pass and
broad-band circuits, stability of microwave
amplifiers.)

Coffee

4. High-power Amplifiers MAX
(Device considerations and characterization,
matching techniques, low-frequency
stability, reliability.)

LECTURERS

Les Besser, Farinon Electric, San Carlos, Calif.

Lee Max, CTC, San Carlos

Noel Marshall.. Frequency West, Santa Clara

Bob Tillman, Hewlett Packard, Palo Alto, Calif.

FEE

The fee for this course is \$15.00 for IEEE reg-
ular members, \$10.00 for student members and
\$25.00 for non-members. The fee also includes
the lunch at SLAC and the material to be hand-
ed out. The registration fee is increased by
\$5.00 after the date of Nov. 5, 1973.

REGISTRATION

The enrollment for this course is limited.
Therefore, persons interested in taking this
course are urged to enroll early by completing
and mailing the registration form below. Com-
panies may enroll for any given number of in-
dividuals, supplying names later. Advance re-
gistration is required. For additional applica-
tions, use separate sheet giving information
requested on enrollment form.

INFORMATION

For additional information concerning the
program, write to or call the course organizers:

Jack LePoff
Hewlett Packard
Assoc.
620 Page Mill Rd.
Palo Alto, Calif. 94304
Phone 415-493-1212

Don Messner
Applied Technology
645 Almanor Ave.
Sunnyvale, Calif. 94086
Phone 732-2710/#2500

MICROWAVE COURSE
REGISTRATION FORM

(Should be received before Nov. 5, 1973)
Late registration: Add \$5.00 to fee.

Mail to: Zvonko Fazarinc
c/o IEEE San Francisco Section Office
Suite 2210
701 Welch Road
Palo Alto, California 94304

Enclosed is check (payable to San Francisco
G-CT Chapter) in the amount of \$
to cover the enrollment fee.

Name
(please print full name)

Address
(Street)

.....
(City and State) (Zip)

Company Name

IEEE Affiliation (Check One)

Member

Student Member

Non-Member

IEEE Membership No:-----

Late Registration (Check if applicable)

IEEE NUCLEAR POWER SYSTEMS SYMPOSIUM

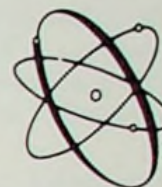
November 14, 15, 16 San Francisco

The fifth Nuclear Power Systems Symposium will be held at the Sheraton Palace Hotel, San Francisco, November 14, 15, 16. Sponsored jointly by PES and NPSS, this conference is for the benefit of electrical engineers in the nuclear power industry.

One session covers operating experience in control instrumentation and electrical systems at Oconee, Surrey, Pilgrim, Indian Point II, and Maine Yankee. There will be a session on control room standardization, operating and construction. The nuclear electrical standards review and interpretation will be by those in the thick of gen-

erating standards. A session on design innovation will include such diverse topics as leak detection, surveillance testing, solid state reactor protection systems, cable, multiplexing, and auxiliary power systems. An NSS session on reactor instrumentation will be available. Dr. Chauncey Starr, president of the new Electric Power Research Institute, is guest speaker.

Programs will be mailed on request to J. F. Osborn, 175 Curtner Avenue, m/c. 665, San Jose, California 95114. Phone: (408)297-3000, ext. 2374



IEEE 1973 NUCLEAR SCIENCE SYMPOSIUM

November 14-16, 1973

Sheraton Palace Hotel, San Francisco

Keynote: Dr. Chauncey Starr, Pres. Electric Power Research Institute

Plenary "kickoff session":

"Significance of Ecological analysis in the Interpretation of Environmental Release of Radionuclides," by Dr. Stanley Auerback, Oak Ridge Labs.

"Key Issues in Setting Priorities for New Energy Technology Research and Development," by Dr. Glenn C. Werth of Lawrence Livermore Labs.

"Gas Cooled Fast Breeder Reactor," by Dr. Peter Fortescue, Gulf General Atomics.

"Scientific Objectives of Space Exploration," by Dr. Hans Mark, NASA Ames Research Center.

Technical Program includes 130 papers in 16 sessions. Two sessions on Biomedical Instrumentation.

Two sessions on "Requirements and Methods for Environmental Radiation Measurements." One session on "Environmental Gamma Ray Analysis."

Seven sessions on "Nuclear Instrumentation Technology", 63 papers.

Chemical and Computer industries also covered with 17 papers.

For registration information and full program contact H. W. Van Ness, Lawrence Livermore Laboratory, P.O. Box 808, Livermore, Calif. 94550.

Tel. 415-477-1100 x 8053. \$5 saving for registration in advance.

NPSS - ONE DAY COURSE—NUCLEAR TECHNIQUES MEDICAL APPLICATIONS

Stanford Linear Accelerator Center
Saturday, November 17, 1973

"Nuclear Techniques in Medical Applications" will be tutorial in nature in that the course will provide a survey of a broad area of nuclear techniques in medical and biological applications. The course aims to appeal to engineers, physicists, and medical practitioners who are not necessarily specialists in the nuclear medical field. The second aim is to promote a better level of understanding of the problems of applying new technologies in particular nuclear technology, to the medical field. The course consists of a series of seven tutorial lectures by a group of outstanding speakers from the nuclear medical and engineering fields.

Speakers and sessions are:

1. Overview: Merits of Developing New Technology For Medical Applications.

--E. James Potchen, M.D., Prof., Johns Hopkins.

2. Current Status of Diagnostic Counting and Imaging Techniques.

--Robert N. Beck, Professor, Univ. of Chicago.

3. A Survey of Radiation Therapy Techniques.

--Theodore L. Phillips, M.D., Prof. and Head, Radiation Oncology, Univ. of San Francisco.

4. Rectilinear Scanning Electronics: What's In the Black Box?

--James H. Larose, M.D., Director, Nuclear Medicine, Emory Univ.

5. Design Principles of a Computer System for Patient Monitoring.

--Ivor N. Hooton, AERE, Harwell, England.

6. Development and Implementation of Digital Techniques Using Small Computers in Nuclear Medicine Including Three Dimensional Reconstruction.

--Thomas F. Budinger, M.D., Ph.D., Donner Laboratory, U.C. Berkeley.

7. New Developments in Biomedical Applications of Nuclear Science: Report on 1973 IEEE Nuclear Science Symposium.

--Leon Kaufman, Ph.D., Assoc. Prof. Radiology, U.C. San Francisco.

Tour of SLAC: Check form below if you wish to participate, 5-6 p.m.

NOV. 17, 1973 COURSE ON
NUCLEAR TECHNIQUES
IN MEDICAL APPLICATIONS
Mail by Nov. 7, 1973

Name _____ Tel. _____

Address _____

IEEE Members _____ Non-member _____

Student _____ Unemployed _____

Course Fees: IEEE Members \$15.

Non-Members \$20 Students or unemployed members \$6 with lunch, \$4 without lunch. Fee includes course notes, lunch, coffee.

Sponsors: IEEE NPSS and EMB Group

Mail Checks to:

IEEE-NPSS, San Francisco Section
c/o Mrs. L. Burch
Bin 26
SLAC, Box 4349
Stanford, CA 94305

For more information, call Mrs. L. Burch, (415) 854-3300, ext. 2401.

-----Check here if you wish to participate in the SLAC tour.

SMC - IS THE ECONOMY REALLY HEATING UP?

Illuminating analogies have been drawn between thermodynamics and information theory, as well as between information theory and economics. The November speaker at the SMC meeting, Dr. Gerry Andeen of Stanford Research Institute, is attempting to complete the cycle by drawing an extended analogy between economics and thermodynamics.

Thermodynamic concepts like heat and work, and properties such as temperature and entropy, will be developed as economic concepts. Analogous interpretations of the first and second laws of thermodynamics will be made, and the consequences of other thermodynamic ideas will be explored. Comparison with conventional economic approaches and other analogies will illustrate the usefulness of the approach and at the same time point out the essential differences between economics and thermodynamics.

Dr. Andeen, a Senior Research Engineer in the Information Science and Engineering Division of SRI, received the Sc.D. degree in Mechanical Engineering from MIT in 1966. His professional interests include behavior of bubbles and drops, and applications of thermal science (heat transfer, thermodynamics, thermal stress).



EM - WOMEN ENGINEERS IN MANAGEMENT

Unusual perspectives of engineering management will be discussed by Major Winona Klare during her talk on "Women Engineers in Management", at the November 13th meeting of the EM Chapter. Major Klare can speak with authority on the subject in that she is a woman, an engineer and in management. She is expected to give us some insight into the unique situations and problems encountered by a woman in becoming and succeeding as an engineering manager.

Major Klare's most recent position with the United States Air Force was as a Field Test Force Director of two major Air Force Satellite programs. She directed and managed a worldwide multi-organizational Field Test Force on the conduct of research and development test operations of orbiting space vehicles.

**MAG - REVIEWS OF THREE CONFERENCES
MMM, MAGNETIC RECORDING AND THE
INTRERN'T'L MAGNETISM CONFERENCES**

John Mallinson of Ampex Research will review the July, 1973 Conference on Video and Digital Recording held in Birmingham, England. The conference included descriptions of progress in developing 100 Megabit/sec digitized video systems. The improvements required of digital magnetic recorders to be used in these systems will be discussed.

Professor Robert L. White of Stanford will give his impressions of the technical and cultural aspects of the 1973 International Conference on Magnetism held in Moscow in August, 1973. The discussion will range from the cultural shock of attending a technical conference in Russia to the Magnetism Research done in Russia labs.

A panel chaired by Harry Kurtzig of ISS will discuss highlights of the 1973 MMM Conference held in Boston on November 13-16, 1973. Areas to be covered include developments in Magnetic Bubble technology, Magnetic Recording, Magneto-optics and advances in magnetic materials.



GGSS - METEOROLOGICAL MEASUREMENTS IN THE 70's

This meeting presents an opportunity to hear an experienced meteorologist discuss such topics as: Recording data instrumentation; Site survey for nuclear plant selection; Micrometeorological measurements for agricultural considerations; and several others.

The speaker is Robert Wademan, manager, Weathermeasure Corp., Systron Donner Division. He received his degree in Meteorology from Texas A&M. His experience includes 3 years as weather officer in the armed forces, 4½ years with PG&E, a short term as weather forecaster in Reno. Since 1970 he has been with Weathermeasure Corp., the world's leading supplier of meteorological instrumentation. Ladies are welcome at this interesting meeting.

COM - 84A SINGLE CHANNEL STATION CARRIER SYSTEM

Recent development in single-channel station carrier systems will be described by James A. Stewart, GTE Lenkurt. The subject system was designed to have cost and performance parameters which are competitive with paired cable for many new subscriber loops. Typical performance characteristics will be presented.

Mr. Stewart received his BSEE degree from the University of British Columbia, and the MS degree from Stanford. He joined GTE Lenkurt in 1951, and has advanced through many responsible positions to that of Senior Staff engineer in the Advanced Development Department.



FUTURE MEETINGS OF INTEREST

IN 1974

Jan 14-16	Winter Simulation Conference	Washington D.C.
Jan 16-18	Nuclear Utilities Planning Methods Symposium	Chattanooga
Feb 13-15	Int'n'l. Solid State Circuits Conf.	Philadelphia
Mar 25-29	Intercon (Exhibits Mar 26-29)	New York
Apr 2-4	Int'n'l. Reliability Physics Symposium	Las Vegas
Apr 9-11	Int'n'l. Optical Computing Conf.	Zurich
Apr 21-24	Int'n'l. Symposium on Circuits and Systems	San Francisco
Apr 22-26	Eurocon '74	Amsterdam
July 16-18	EMC International Symposium	San Francisco
Sep 10-13	Comcon (Fall)	Washington D.C.