EDITOR'S PROFILE of this issue

from a historical perspective …

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

September, 1974:

Cover: WESCON this year is in Los Angeles, at the L.A. Convention Center. More on pages 2 and 3.

Page 2: Ted Hoff of Intel, who developed the 4004 microprocessor in 1971, speaks on Schottly bipolar LSI ICs that can be constructed from various blocks of logic along with ROMs or PROMs. Existing microprocessors are all MOS technology, and rather slow. Ted got his PhD at Stanford and was Intel employee #12. I've worked with him in our Silicon Valley Technology History Committee, meeting at his home in Los Altos Hills several times. His full basement has several shop areas, as well as a complete stack system of all his old IEEE journals, for quick access.

Pages 4-7: The roster of this year's Section, Subsection, and Group (Chapter) officers is shown.

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

SEPTEMBER 1974

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THE COVER STORY

An approach to the Los Angeles Convention Center, where the 23rd annual Western Electronics Show and Convention will be held September 10-13. A total of 550 exhibit units will display products of over 300 manufacturers. A concurrent professional program of 28 sessions will be presented at the Convention Center. There will be four parallel sessions each day at 10 a.m. and 2 p.m. See the detailed announcement in this issue.

Wescon is a non-profit presentation, and is co-sponsored by the Los Angeles Council and San Francisco Sections of the Institute of Electrical and Electronics Engineers, and the Southern and Northern California Chapters of the Electronic Representatives Association.

GRID COVER PHOTOS

Please remember the editor needs striking cover pictures for six more issues of the GRID this year. Get your Group/Society/Subsection on the front page!

PROFESSIONAL ACTIVITIES COMMITTEE

SAN FRANCISCO SECTION PAC GOALS FOR '74-'75

by W.W. Raukko

1. *Quick Reaction/Communication Network*
   Establish a network of IEEE members in a cross section of companies and geographic locations within the Section to provide a means of rapid upward and downward communication. Recruit *at least* one network representative for every 100 members. (see page 8).
2. *State Legislative Activity*
   Maintain an awareness of state legislation pertinent to the EE profession.
3. *Employment Practices Support*
   Maintain contact with national employment practices activity. In particular, conduct a Section survey to determine membership opinion regarding existing patent practices and, based on the results of that survey, generate a plan to effect appropriate changes in existing practices through the national committee.
4. *Professional Awareness of Students*
   Carry the message of professionalism in electrical and electronic engineering to students for improving their career planning to provide long term benefits to the profession. This effort will be conducted by an ad hoc subcommittee of USAC affiliated with S.F. Section PAC.
5. *Pension Program Support*
   Continue to support the National Pension Committee's efforts through our PAC representative on that committee.
6. *Section Reorganization Support*
   Actively support and aid the reorganization of the San Francisco Section.
7. *Sustained Employment Service*
   Complete the study of unemployment problems of S.F. Section members and continue this effort by establishing an on-going service based on the results of that study.
8. *Career Study*
   Through USAC funding, complete current study on the career pattern of a typical E.E.
9. *PAC Membership Growth*
   Through publicity and active recruiting, seek to increase membership involvement in PAC activities and to increase the number of people on PAC.

IEEE EMPLOYMENT REFERRAL SERVICES

IEEE members seeking a new position may obtain current lists of job openings by sending a self-addressed stamped set of envelopes to: IEEE Employment Services, 701 Welch Road, Suite 2210, Palo Alto, CA 94304.

The job openings list will be up-dated and mailed bi-weekly. A limit of 4 envelopes is requested. Confidentiality will be maintained. The mailed job listings represent the priority needs of employers. A nominal fee to cover expenses is charged for listing a job.

Unemployed non-member EE's also may obtain job listing by payment of $20. ($40 if employed). This payment will apply toward IEEE membership and include all benefits.

The IEEE Employment Services also has at its office a list of Bay Area employers, resume forms and brochures, with helpful hints for obtaining and conducting job interviews.

These upgraded activities are an outgrowth of a continuing investigation into employment services having the objectives of maximizing EE employment and enhancing EE advancement opportunities.
The IEEE Employment Services are sponsored by the SF Section Professional Activities Committee the USAC Chairman.

INTEL BIPOLAR MICROCOMPUTER

The Computer Society September meeting will feature a presentation on a new concept in integrated computers. The LSI microcomputer has emerged as one of the most important electronic developments of the decade. Until now, microcomputers have been realized with MOS technologies and have offered limited performance.

Ted Hoff of Intel will describe a family of Schottky bipolar LSI integrated ciruits which may be used to construct a variety of high performance microprogrammed processors and controllers. These processors may be implemented with a small number of LSI blocks and use standard PROM's or ROM's for the microprogram.

Ted Hoff, manager of applications research, has been with Intel since 1968. During this period, he has worked on memory system design, microcomputer architecture and computer simulation of MOS circuits. He holds MS and Ph.D. degrees from Stanford University.

MEETING CALENDAR

ANTENNAS & PROPAGATION
SEPT. 13
Story on Page 7
DINNER DANCE AND TALK ON RADIO CONTACT WITH SPACE ALIENS. Radio Astronomy Institute, Stanford Univ.

SEPT. 13, Friday, Michaels, 830 East El Camino Real, Sunnyvale. Cocktails at 6:30 and dinner at 7:30 PM. Reservations must be paid in advance (Steak $8.50, Salmon $5.95) available through any Activities Committee member or Dr. Fred Tesche (415) 845-5019 by Sept. 6th.

COMMUNICATIONS SOCIETY/ VEHICULAR TECHNOLOGY
SEPT. 3
Story on Page 7
JOINT MEETING. WINE TASTING, STEAK DINNER, KICK-OFF MEETING.

SEPT. 3, Tuesday, Paul Masson Mountain Winery, Saratoga. Wine tasting, 6:30, dinner at 7:30 PM. Reservations: Jorgen Bistrup (415) 593-8461 or Kathi (415) 349-3111 x 274 by Aug. 30th.

COMPUTER SOCIETY
SEPT. 18
Story on Page 2
SEMINAR: THE INTEL BIPOLAR MICROCOMPUTER. Ted Hoff, Mgr., Applications Research, Intel, Santa Clara.

SEPT. 18, Wednesday, 8:00 PM, University of Santa Clara Daly Science Hall, Room 207. Dinner 6:15 PM, place to be announced. Call (408) 984-4482 by 12 noon Sept. 16th.

EAST BAY SUBSECTION
SEPT. 26
Story on Page 7
TOUR OF UNION OIL REFINERY, Rodeo, Calif. Limited to 30 adults. Wear long sleeves & low heels. NO CAMERAS.

SEPT. 26, Thursday, 6:30 PM. Meet at the Refinery. No dinner. Reservations: Jim St. Arnaud (415) 542-497 by Sept. 25th.

ELECTROMAGNETIC COMPATIBILITY
SEPT. 18
Story on Page 8
OPERATIONAL AMPLIFIER APPLICATIONS IN ACTIVE FILTERING. Maise Hamaoue, Fairchild System Technology, Mt. View.

SEPT. 18, Wednesday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Cocktails 6:00 and dinner 6:45 PM. Reservations: Victor Turesin (408) 742-5336 by Sept. 18th.

ENIGNEERING IN MEDICINE & BIOLOGY
SEPT. 19
Story on Page 8
FIRST OF 3-PART SERIES ON THE "ARRYTHMIA DETECTION OF THE ELECTROCARDIOGRAM". Dr. Herman Uhley, Cardiologist, Mt. Zion Hospital, S.F. (2nd lecture, Oct. 17, 3rd - Nov. 14)

SEPT. 19, Thursday, 8:00 PM, UC Medical Center, HSW #300, 3rd & Parnassus, SF. Dinner at 6:00 PM, Chuck Wagon, 215 W. Portal, SF. Reservations: Barbara Brasfield (415) 525-1113.

ENGINEERING MANAGEMENT
SEPT. 17
Story on Page 8
THE MANY FACETS OF TECHNICAL INTEGRITY IN A MANUFACTURING CORPORATION. Frank Boxall, Consultant.

SEPT. 17, Tuesday, 8:00 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Cocktails 6:00 and dinner at 7:00 PM. Reservations: Mrs. Scott (408) 243-3600 x 365 by Sept. 16th.

GOLDEN GATE SUBSECTION
SEPT. 17
Story on Page 8
IEEE IN THE BAY AREA. Ed Jackson, Chairman, SF Section; Bill Rauker, Chairman Professional Activities Committee, SF Section, and Leon Glahn, Chairman GGSS.

SEPT. 17, Tuesday, 12 noon, PG&E, 3rd Floor Cafeteria, 77 Beale St., SF. Buy a lunch in the Cafeteria. Reservations: Leon Glahn, (415) 764-7757 by noon, Sept. 16th.

INDUSTRY APPLICATION SOCIETY
SEPT. 24
Story on Page 8
MISAPPLICATION OF GROUND FAULT SYSTEMS. John Moore, Pres. Electrotest, Inc.

SEPT. 24, Tuesday, 7:00 PM, Four Seas, 731 Grant Ave., SF. Cocktails 5:00 and dinner 6:00 PM. Reservations: Moon Yuen (415) 764-4067 by noon, Sept. 23rd.

MICROWAVE THEORY & TECHNIQUES
SEPT. 19
Story on Page 7
COMPUTER-AIDED DESIGN AND OPTIMIZATION OF MICROWAVES FREQUENCY MULTIPLIER. Les Besser, Farinon Electric Co.

SEPT. 19, Thursday, 8:00 PM, SRI Building 44, Laurel St. entrance. No dinner.

NUCLEAR & PLASMA SCIENCES SOCIETY
SEPT. 17
Story on Page 7
SEMINAR: PRESENTATION WITH QUESTIONS DURING AND AFTER INTRODUCTION TO CAMAC - DATA BUSSING STANDARD FOR ALL COMPUTER APPLICATIONS. Fred Kirsten, Lawrence Berkeley Lab and Ray Larsen, SLAC.

SEPT. 17, Tuesday, 7:00 PM, SLAC Auditorium, 2575 Sand Hill Road, Menlo Park. No dinner.

POWER ENGINEERING SOCIETY/ASME
SEPT. 28
Story on Page 8
JOINT FIELD TRIP TO PG&E's "THE GEYSERS", sponsored by PES and American Society of Mechanical Engineers.

SEPT. 28, Saturday, 8:30 AM. Meet at PG&E, 77 Beale St., SF. For reservations and further information call Carol Franke (415) 781-4211 x 1442.

RELIABILITY
SEPT. 18
Story on Page 8
IS NUCLEAR POWER REALLY SAFE? Debate: The Sierra Club vs. The Power Industry. Dr. Russell M. Ball, Babcock & Wilcox and the Electric Power Research Institute and Dr. Alan Tucker, Sierra Club and Dept. of Physics, San Jose State Univ.

SEPT. 18, Wednesday, 8:00 PM, Stanford University Physics Lecture Hall - PH 101. Cocktails 6:00 and dinner 6:30 PM at Stickney's, Town & Country Village, El Camino north of Embarcadero, Palo Alto. Reservations: Section office (415) 327-6622 by 2 PM, Sept. 18th.

SYSTEMS, MAN & CYBERNETICS
SEPT. 11
Story on Page 3
SEMINAR: TALKING WITH A COMPUTER IN ENGLISH. Prof. Terry Winograd, Stanford, Univ.

SEPT. 11, Wednesday, 8:00 PM, SRI Conference Room B, Bldg. 1, 333 Ravenswood Ave., Menlo Park. Dinner: Butterfield's, 1706 El Camino Real, Menlo Park. Reservations: Section office (415) 327-6622 by noon Sept. 11th.

JOIN IEEE IN SEPTEMBER AND GET THREE MONTHS' FREE FOR YOUR FIRST YEAR'S DUES!

SMC - "TALKING WITH A COMPUTER IN ENGLISH"

An exciting area of Artificial Intelligence research concerns the problem of natural language communication with computers. A break-through in this area could have revolutionary impact by allowing laymen direct access to computers. The Systems, Man, and Cybernetics group is fortunate to have as its speaker, Professor Terry Winograd of Stanford University, one of the world's foremost researchers in this young field.

Dr. Winograd will outline the fundamental problems involved in language understanding and will describe, with the aid of film, a particular system that allows a human to converse in English with a simulated robot. His talk will conclude with a critical survey of current work. Terry Winograd received his doctorate in applied mathematics from MIT while associated with the Artificial Intelligence Laboratory there.

SECTION EDUCATION STUDY COMMITTEE

Interested IEEE members are invited to join this new committee which will study and make recommendations for the SF Section's potentially and greatly expanded effort in meeting the educational needs of the members and the Group and Society Chapters (for example, short courses). For further information, please contact Tom Magill, Chairman, Education study Committee at (415) 326-6200 x 2664.

PHOTOS OF SPEAKERS

We regret that the quantity of important announcements in this issue made it necessary to omit photographs of speakers. Please include such pictures, when available, for future issues.

This 23rd annual Western Electronic Show and Convention will be the largest and most varied in several years, largely because of the so-called "pervasiveness" of electronics into many new consumer, commercial, and industrial products and systems. Three hundred manufacturers will show their new products in 550 exhibit units in the Los Angeles Convention Center September 10-13. Predicted attendance is 30,000 or more engineers, executives, technicians, and other members of the electronics industry.

A concurrent professional program of 28 sessions will also be presented in the Convention Center, in four large auditoriums in the mezzanine level. Sessions will run four-at-a-time at 10 a.m. and 2 p.m. Tuesday through Friday morning. Two motion picture theaters will also operate for the four days--a Science Film Theater and a Management Film Theater. Wescon's $5 visitor registration includes admission to the expositions and program sessions and the film theaters for all four days.

One special session at 7 p.m. on Wednesday, September 11, will reach a little farther out than the 27 devoted to new technology and systems applications. Titled "Psychotronics," it will present descriptions and demonstrations by a team of UCLA faculty members who are using electronics systems and techniques in the exploration of parapsychology. Dr. Thelma Moss and her colleagues will show Kirlian still photos and color motion pictures; demonstrate the "phantom leaf" photographic experiments, and report on unorthodox medical procedures. Admission is by Wescon registration.

On September 10, the Wescon Luncheon will be held at the Regency Hyatt Hotel, and will feature a major address by Donn Williams, president of Rockwell International Electronics Operations.

The traditional Wescon all-industry cocktail reception will be held Tuesday evening at the Los Angeles Hilton.

Women-at-Wescon will have their own activities while their husbands are deep in diodes at the Convention Center. They will host a welcoming tea in their beautiful hospitality suite at the Regency Hyatt on Tuesday afternoon; offer a champagne luncheon and fashion-musical program Wednesday in the Regency Ballroom; and sall forth on air-conditioned buses for a visit to the new Getty Museum in Malibu on Thursday.

San Francisco Section IEEE Officers 1974 - 1975

SECTION OFFICERS


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Chairman: E.D. JACKSON, Pacific Telephone, 4 No. 2nd St., Room 750, San Jose 95113; (408) 291-3106.

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EXECUTIVE COMMITTEE

Those above and:


S.F. KAISEL L.G. FITZSIMMONS

Section/WESCON Director: S.F. KAISEL, P.O. Box 4153, Woodside 94062; (415) 851-2425 or (408) 247-3601.

Section/WESCON Director: L.G. FITZSIMMONS, 1585 Walnut Drive, Palo Alto 94303; (415) 324-2411.


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Section Director: J.L. MELCHOR, Westwind Investment Co., 340 - 2nd St., Suite 11, Los Altos 94022; (415) 941-6766.

Section Director: J.B. DAMONTE, 1716 Hillman Ave., Belmont 94002; (415) 742-6112.


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East Bay Subsection Chairman: J.A. ST. ARNAUD, Pacific Telephone, 666 Folsom St., Room 932B, San Francisco 94107; (415) 542-4974.


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Golden Gate Subsection Chairman: L.C. GLAHN, Bechtel Corp., P.O. Box 3965, San Francisco 94119; (415) 764-7757.

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Membership Chairman: E.O. AMMANN, Sylvania, Box 188, Bldg. 4, Mt. View 94040; (415) 966-2635.


A. NALBANDIAN W.W. RAUKKO

Group/Society Chapter Coordinator: ANDREW NALBANDIAN, Lockheed M & S Co., Bldg. 156A, Dept. 68-10, Sunnyvale 94088; (408) 742-5336.

PAC Chairman: W.W. RAUKKO, Hewlett-Packard Co., 1501 Page Mill Road, Palo Alto 94304; (415) 493-1501 x 2065.

Student Activities Chairman: To be announced.

Awards & Nominations: D.W. MARTIN, Section Jr. Past Chairman.

Bylaws: L.G. FITZSIMMONS, Section/WESCON Director.


D.T. MAGILL H.W. WEBBER

Education Coordinator: D.T. MAGILL, SRI, 333 Ravenswood Ave., Menlo Park 94025; (415) 326-6200 x 2664.

Fellow: H.E. WEBBER, 1121 Cotton St., Melno Park 94025; (415) 324-3055 or (408) 255-6200.

Financial Policy: B.R. BAARTS, Section Treasurer.


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EMC FALL SEMINARS

THE INSTITUTE OF ELECTROMAGNETIC COMPATIBILITY (EMC)

— presents —

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DESIGN & MEASUREMENT FOR CONTROL OF EMI	SEPT. 9-13		OCT. 7-11		OCT. 21-25	NOV. 18-22	5 DAYS
PREDICTION & ANALYSIS FOR CONTROL OF EMI		SEPT. 17-19		OCT. 16-18			3 DAYS
MIL-STD-462/462B EMI TESTING & CLINIC		SEPT. 23-27			NOV. 11-15		5 DAYS
EMI CONTROL IN DESIGN & INSTALLATION OF COMPUTERS		OCT. 1-3					3 DAYS
FCC & CISPR EMC SPECIFICATIONS & MEASUREMENTS					NOV. 5-7		3 DAYS
MOBILE COMMUNICATIONS					DEC. 3-5		3 DAYS

(Retain this schedule. It is the only one to be issued until Winter-Spring 1975)

DON WHITE CONSULTANTS, INC.
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ABOUT DWCI EM

On occasion RFI/EMI/EMC has been called a *black magic* art. Sometimes it is thought of as a mystical rule-of-thumb. We eliminate both these situations and replace them with the scientific approach — quantitative lectures supported by discussions of rationale. While basics and fundamentals are especially stressed, the pragmatic approach to solutions of EMI problems is used. Each course uses an optimum mix of viewgra presentations and blackboard chalk talk. Handou include one or more volumes of the DWCI EM EMC handbook series, 3-ring binders, and other ai

ELECTROMAGNETIC COMPATIBILITY — DESIGN & MEASUREMENT FOR CONTROL OF EMI

COURSE DESCRIPTION:

This is a one-week seminar on Electromagnetic Interference (EMI) control and Electromagnetic Compatibility (EMC). The course is comprehensive and covers the RFI/EMI/EMC field including inter- and intra-system/equipment prediction and analysis, EMC specifications, control and test plans, EMI design control, fix, retrofit techniques, instrumentation, and test methods and procedures. This is our broadest and most popular course.

The principal text used is Vol. 3, *EMI-Control Methods and Techniques.* Other hand-out material and samples are also included.

WHAT YOU WILL LEARN — HOW TO:

- Predict and analyze EMI
- Ground a cable shield and where
- How much shielding is needed in boxes
- Use twisted wire pairs or coaxial cables
- Use triaxial or quadrax cable
- Suppress troublesome transients
- Select and employ EMI gasketing
- What does grounding really do at VHF & UHF?
- Tell and block common or differential mode EMI
- Select or specify an EMI filter
- Shield against magnetic fields
- EMC design & retrofit computers
- Select single-point or multi-point grounding
- Write an EMI Control or Test Plan
- Equip an EMI Test Facility
- Select light-weight EMC components
- EMI-Control your products
- Run down EMI culprits and victims
- Do EMI testing in-house or contract out
- Write EMC portions of RFQ/RFP/IFB's
- Respond in proposals with EMI specs
- Comply with FCC Rules and Regulations
- Comply with CISPR Specifications

COURSE OUTLINE AND SYLLABUS

First Day (Overview & Prediction & Analysis)
- Description of EMI with Examples
- Terms and Definitions
- Electromagnetic Ambients
- Inter-System Prediction & Analysis
- Intra-System Prediction & Analysis

Second Day (Design Techniques for EMI Control)
- Wiring and Cables
- Grounding and Bonding
- Shielding
- Packaging and Gasketing
- HP-65 EMI Prediction & Control

Third Day (Design Techniques for EMI Control)
- Filters & Filtering Techniques
- Transient Noise Suppression
- Circuits and Networks
- HP-65 EMI Prediction & Control
- EMI Control and Test Plans

Fourth Day (Test Areas & Instrumentation)
- Emission Antennas
- Open Field & Shielded Rooms
- Special Susceptibility Test Chambers
- Current Probes & LISN's
- Receivers
- Spectrum Analyzers
- Impulse Generators
- Signal Sources
- Power Oscillators

Fifth Day (Measurement Techniques)
- Broad & Narrowband Interference
- Coherent & Incoherent Noise
- Conducted Emission Measurements
- Radiated Emission Measurements
- Conducted Susceptibility Measurement
- Radiated Susceptibility Measurements
- FCC Parts 15 & 18 Testing
- CISPR Testing
- CSA & VDE Specifications

LOCATION AND DATES: 5 DAYS — $575 PER STUDENT

Montreal, Canada	Munich, Germany	Washington, D. C.	San Francisco, Ca
Sept. 9-13, 1974	Oct. 7-11, 1974	Oct. 21-25, 1974	Nov. 18-22, 1974

MIL-STD-462/462B EMI TESTING & CLINIC

COURSE DESCRIPTION:

This is a one-week seminar on the ABC's and *how-to-do-its* for EMI Testing. Emphasis is placed on MIL-STD-462 and proposed —462B conducted and radiated, broad and narrowband, emission and susceptibility measurements. This necessitates a complete review of MIL-STD-461A and the forthcoming MIL-STD-461B Specifications. Instruments and test facilities are reviewed together with calibration techniques and test specimen preparation.

The two principal texts used are Vol. 1 of the EMI/EMC Handbook Series, *Electrical Noise and EMI Specifications* and Vol. 2, *EMI Test Methods & Procedures.* Other supplementary training notes on test set up configurations, calibrations, and measurement techniques are passed out to the class.

WHAT YOU WILL LEARN — HOW TO:

- Write a test plan
- Perform an instrument & test error analysis
- Calibrate EMI instruments
- Calibrate EMI sensors
- Design susceptibility chambers
- Write an EMI proposal
- Identify broad & narrowband emissions
- Identify coherent & incoherent emissions
- Make ambient sight surveys
- Perform conducted emission measurements
- Perform radiated emission measurements
- Perform conducted susceptibility measurements
- Perform radiated susceptibility measurements
- Perform MIL-E-6051D testing
- Prepare your own EMI specifications
- Analyze EMI specification limits
- Do semi-automatic testing
- Do automatic testing
- Obtain & o[illegible] measurement errors
- Stimulate & load test items
- Ask for or prevent EMI waivers
- Equip an EMI Test Facility

COURSE OUTLINE AND SYLLABUS

First Day (Instruments)
- EMI Test Areas — Open Fields & Shielded Rooms
- Emission Antennas
- Special Susceptibility Chambers
- Current & Voltage Probes & LISN's
- Receivers & Spectrum Analyzers
- Impulse Generators & Other Calibrators
- Power Oscillators & Amplifiers
- Automatic Systems

Second Day (Calibration Techniques)
- Broad & Narrowband Measurements
- Conducted & Radiated Measurements
- Impulse Bandwidth
- Enclosure Proximity Effects
- Peak Detector Performance
- Measurement Error Budgeting
- Secondary Standards
- Sample Test Plans & Reports

Third Day (Spec Review & Specimen Interface)
- Summary MIL-462/462B Tests
- Summary MIL-461A/461B Limits
- Rationale for Limits
- Applications, Missions , & Waivers
- Test Specimen Preparation
- Specimen Exercising & Loading
- Government Inspectors & Subcontracti
- Relationship to MIL-E-6051D Testing

Fourth Day (Conducted Testing)
- CE01/CE03 Test Procedures
- CE02/CE04 Test Procedures
- CE06 Test Procedure
- CS01/CS02 Test Procedures
- CS03 Test Procedure
- CS04/CS05 Test Procedures
- CS06 Test Procedure
- CS07 Test Procedure

Fifth Day (Radiated Testing)
- RE01/RS01 Test Methods & Procedures
- RE02 Test Methods & Procedures
- RE03 Test Methods & Procedures
- RE04 Test Methods & Procedures
- RE05/RE06 Test Methods & Procedure
- RS02/RS04 Test Methods & Procedure
- RS03/ Test Methods & Procedures
- Course Summary

LOCATION AND DATES: 5 DAYS — $550 PER STUDENT

Las Vegas, Nevada	Washington, D.C.
Sept. 23-27, 1974	Nov. 11-15, 1974

RAINING SEMINARS

Three of the six Fall 1974 training seminars introduce the Hewlett-Packard Model 65 hand-held, programmable calculator for rapid solution of student-presented EMI problems during lectures. Retrofit and fix EMI dB budgeting techniques are used. Pre-recorded EMC magnetic program cards for the calculator-computer are available as an option to registered students only. Bring your HP-65 calculator to class or rent ours and have fun while solving problems. The post-mortem and critique of each solution are especially exciting and educational.

PREDICTION & ANALYSIS FOR CONTROL OF EMI

COURSE DESCRIPTION:

Electromagnetic Interference (EMI) Prediction and Analysis is a three-day comprehensive training program on both communications-electronics inter-system and equipment/product EMI prediction and control.

Covering antenna-to-antenna coupling of desired and undesired emissions and receptions, the course presents the latest techniques of both manual and computer prediction and analysis, including class use of the HP-65 computer. Typical examples include land mobile, microwave relay, space communications, radar, AM broadcast, FM & TV, navigation systems, and telecommunications.

The intra-system part of the course covers prediction and control of cable-to-cable, conducted, common-mode coupling, and ambient-to-cable coupling. Both manual prediction forms and the HP-65, hand-held computer are used.

The main text used is Vol. 5 of the EMI/EMC Handbook Series, *EMI Prediction and Analysis.* Other supplementary training notes are passed out including several forms for class EMI prediction.

COURSE OUTLINE AND SYLLABUS

First Day (Inter-System Prediction)

- Inter-System vs Intra-System
- Electromagnetic Ambients
- Development of Short Prediction Form
- Class Examples Using Prediction Form
- EMI Prediction Statistics
- Illustrative Examples
- Examples Employing HP-65 Computer
- Retrofit and Fix Options

Second Day (Multiple TX-RX Prediction)

- Use of Multimode Prediction Form
- Examples Using Long Prediction Form
- Transmitter & Receiver Characteristics
- Antenna & Propagation Characteristics
- Receptor Degradation Criteria
- Multiple TX-RX Predictions
- Rapid-Culling Techniques
- Illustrative Examples

Third Day (Intra-System Prediction & Design Control)

- Cable-Coupling Relations
- Common-Mode Impedance Coupling Relations
- Conducted-Coupling
- Ambient-to-Cable Coupling Relations
- Intra-System Prediction Form
- Class Examples Using Prediction
- Examples Employing HP-65 C

LOCATION AND DATES: 3 DAYS – $395 PER STUDENT

Las Vegas, Nevada — Sept. 17-19, 1974

Ottawa, Ontario, Canada — Oct. 16-18, 1974

FCC & CISPR EMC SPECIFICATIONS & MEASUREMENTS

COURSE DESCRIPTION:

This is a three-day seminar on FCC Rules and Regulations, Parts 15 and 18, and CISPR EMC specifications covering organizations, terms and definitions, how to get a test item type approved or certificated and test methods and procedures.

Federal Communications Commission (FCC) Part 15 on R-F Devices, includes broadcast receivers, low-level telemetry, garage door openers, radio-control toys, carrier-current systems, incidental radiating devices, Class I TV devices. Certification procedures are discussed both logistically and technically.

FCC Part 18 on Industrial, Scientific, and Medical (ISM) equipment includes ultra-sonic, industrial-heating, R-F stabilized arc welders, medical diathermy, microwave ovens, and the like. Test methods and techniques are discussed.

Where electrical and electronic products are sold overseas, one or more specifications of the CISPR (International Special Committee on Radio Interference) nations may have to be satisfied. CISPR organization, specification limits, publications, instrumentation and facility requirements, and measurement techniques are discussed.

OUTLINE AND SYLLABUS

First Day (FCC Part 15, R-F Devices)

- FCC EMC Organizations
- Public Law 90-379 & Implications
- Type Approval, Acceptance & Certification
- Incidental Radiating Devices
- Receiver Radiation & Conduction
- Low-Power Communication Devices
- Field Disturbing Sensors
- Auditory Training Devices
- Class I – TV Devices
- Data Processing Equipment

Second Day (FCC Part 18, ISM Equipment)

- Ultrasonic Equipment
- Industrial Heating Equipment
- Medical & Diathermy Equipment
- R-F Stabilized Arc Welders
- Miscellaneous Equipment
- SAE J551b – Engine Ignition
- OSHA Applicable Standards
- ANSI Applicable Standards
- UL & NEMA Standards

Third Day (CISPR Specifications)

- CISPR Organization
- CISPR Publications & Manuals
- CISPR Specification Limits
- Principal CISPR Recommendations
- CISPR Instrumentation Requirements
- CISPR Measurement Techniques

VDE, CSA, and Other National Specifications

LOCATION AND DATES: 3 DAYS – $375 PER STUDENT

Washington, D. C. — Nov. 5-7, 1974

EMI CONTROL IN DESIGN & INSTALLATION OF COMPUTERS

COURSE DESCRIPTION:

EMI Control in Design & Installation of Computers is a three-day comprehensive training program on computers, peripherals, and associated interface equipments. The seminar is divided: EMI control in design and installation to assure a cost-effective susceptibility performance, and EMI control in design and production to assure compliance with applicable portions of CISPR member nation emission specifications including FCC, VDE, CSA, and others.

The training seminar stresses the design and measurement techniques for the control of EMI in data-processing equipment. Thus, topics of system grounding and bonding, cable harness design and routing, shielding, filtering, isolation transformers, uninterruptable power supplies, are discussed in length. EMC performance measurements are reviewed as well as EMI diagnostic testing in customer installations.

The main handout material is a three-ring binder of special illustrations. Other supplementary material includes Vol. 3 of the EMI/EMC Handbook Series, *EMI Control Methods and Techniques.*

COURSE OUTLINE AND SYLLABUS

First Day (Commercial Environments & Requirements)

- National & International Requirements
- Conducted & Radiated Emissions
- FCC, CISPR, VDE, CSA Specifications
- Data Processing Environments
- Conducted & Radiated Susceptibility
- Electrostatic Discharge
- EMI Prediction & Analysis
- EMI Instruments
- EMI Test Programs

Second Day (Commercial Test Procedures)

- Conducted Emission Testing
- Artificial Mains Correlation
- Quasi-Peak & Peak Relationship
- Power Line Transients
- Near & Far-Field Measurements
- Conducted Emission Testing
- Conducted Susceptibility Testing
- Radiated Emission Testing
- Radiated Susceptibility Testing
- Electrostatic Discharge Testing

Third Day (Computer EMI Control Techniques)

- Differential &Common Mode Coupling Analysis
- Filter Design, Selection, and Installation
- Power Line Transient Suppression
- EMI Gaskets and Shielding Materials
- Data Cable Design and Shielding
- Wire and Harness Design and Routing
- EMI Control in Circuits and Networks
- System Grounding and Bonding
- Uninterruptable Power Supplies
- Cost Effectiveness Strategy

LOCATION AND DATES: 3 DAYS – $375 PER STUDENT

Las Vegas, Nevada — Oct. 1-3, 1974

MOBILE COMMUNICATIONS

COURSE DESCRIPTION:

This is a three-day seminar on mobile communications with emphasis on land-mobile service. System and equipment characteristics, capabilities, performance, and cost are discussed. Frequency allocation and management includes factors influencing both selection of frequency and logistics. The impact of FCC and other rules and regulations and licensing are reviewed together with EIA and military specifications and standards.

System design and prediction equations are presented. Factors include propagation modes, terrain conditions, ambient electromagnetic and man-made noise, antenna type and tower height, transmitter and receiver characteristics and required quality and range of service. Signal-to-noise-plus-interference prediction forms are used and the HP-65 hand-held computer is employed to facilitate illustrative examples and trade-off in design or selection and use.

The main handout material used is manuscript notes from the lecturer's forthcoming handbook on Mobile Communications. Other supplementary material includes Vol. 5 of the EMI/EMC Handbook Series, *EMI Prediction and Analysis.*

COURSE OUTLINE AND SYLLABUS

First Day (Tuesday, December 3, 1974)

- Mobile Systems Description
- User Requirements
- System Characteristics
- Frequency Allocation & Management
- FCC Regulations
- Licensing
- Design Tradeoffs
- Frequency Selection
- Base Station Considerations
- Mobile Unit Considerations
- Cost
- Equipment Specifications & Standards
- Illustrative Examples

Second Day (Wednesday, December 4, 1974)

- System Design
- System Performance
- Spectrum Considerations
- Propagation
  - Basic Transmission Loss
  - Multipath & Terrain Effects
- Electrical Noise
  - Sources, Characteristics & Levels
  - Suppression & Control
- Illustrative Examples Using HP-65 Computer

Third Day (Thursday, December 5, 1974)

- Base Stations & Mobile Units
  - Transceivers
  - Antennas & Towers
  - Siting
  - Dispatch Console
  - Power Supplies
- Electromagnetic Interference
- Frequency Assignment
- Operational Problems
- Illustrative Examples Using HP-65 Computer

LOCATION AND DATES: 3 DAYS — $375 PER STUDENT

Washington, D. C. Dec. 3-5, 1974

WHO SHOULD ATTEND

While the six different seminars are intended for somewhat different interests in the EMC/EMI/RFI disciplines and related fields, the following type personnel will find two or more of the courses to be timely applicable:

- Design Engineers
- Installation Engineers
- Test Engineers
- Technical Marketeers
- Prediction Analysts
- Field Engineers
- Telecommunicators
- Applications Engineers
- Senior Technicians
- Project Engineers
- System Engineers
- Spectrum Managers

ABOUT DEDICATED TRAINING COURSES TAUGHT AT A CUSTOMER'S FACILITY

When a customer desires to train at least six students, he will find it more economical and convenient to have the course taught at his facility. Thus, in addition to a more favorable price break, the customer enjoys savings of student long distance travel, local travel, per diem, and outtage time.

Another major benefit of customer dedicated EMC courses is tailoring a course to meet specific customer missions and needs. After discussing a customer's objectives, requirements, student body education level, and the like, a modified syllabus is presented. After critique, a "fine tuning" syllabus is prepared for the course. There is no additional charge for a training course modification to existing listed courses provided not more than 20% of any course or combinations thereof is to be reworked. If a major overhaul is required, additional time and materials will approximate a 10% add-on to course price.

Sometimes a customer desires to stagger the training days or to run either AM or PM sessions only. In this way, students have some in-between time to attend to matters pertinent to their business. Arrangements of this type are made for an additional consideration. Some customers desire to run both AM and PM sessions so that no one student will be away from his desk or lab more than 50% of any day. Thus, a 5-day course becomes 10 morning and 10 afternoon repeat sessions over a 2-week interval.

Occasionally, a customer may have only a few students but likes the advantages of having a training program taught in his facility. In that case, the customer is invited to engage one or more other industries or government agencies within its area or city and become host to these organizations. The cost may then be pro-rated over the different organizations. Arrangements, other than payments, however, are made with the host organization only.

When DWCI training programs are taught at a customer facility, the price covers all expenses including instructor cost, his travel and per diem, one or more handbooks, as applicable, special handout notes, manufacturers' literature, and exhibits including audio/visual material used by the instructor. Write for details of the DWCI EMI/EMC Dedicated Training Seminars.

INSTRUCTORS

Donald R. J. White holds BSEE and MSEE degrees from U. of Md. He is a consultant in electromagnetic compatibility and has published several books and many papers. Over the past 20 years, he has held positions in government as well as large and small industry. He is past National Chairman of the IEEE Professsional Group on EMC.

William G. Duff holds the BEE and MSEE degrees and has completed course requirements for D.Sc. He is now a principal engineer with Atlantic Research Corp. where he is active in projects relating to mathematical modeling techniques for EMC prediction and analysis. He is presently Associate Editor of EMC Newsletter.

EMC TRAINING COURSE REGISTRATION FORM

Fall 1974

Gentlemen:

Please register the following student(s):

Name: _____ Title: _____

Name: _____ Title: _____

Name: _____ Title: _____

Name: _____ Title: _____

Your Company/Agency _____

Your Department/Division _____

Street Address _____

City _____ State _____ Zip _____

Phone: Area Code _____ Number _____ Extension _____

For the following Course (Mark with "X"):

- ☐ EMC-Design & Measurement for Control of RFI/EMI
- ☐ MIL-STD-462/462B EMI Testing & Clinic
- ☐ Prediction & Analysis for Control of EMI
- ☐ EMI Control in Design & Installation of Computers
- ☐ FCC & CISPR EMC Specifications and Measurements
- ☐ Mobile Communications

Write in Course Location:

_____

Write in Course Dates:

_____ 1974

Options for Registered Students Only:

☐ I/we can attend only one or two days of either a 3-day or 5-day training course. The one and two day registration fee includes instructional material covering that period and coffee/coke breaks:

☐ Single day at $175 (state which day: _____)

☐ Two days at $285 (state which days: _____)

☐ Rental of Hewlett-Packard Model 65 Hand-Held Computer (during the courses in which it is used) including rental of special magnetic program cards: $75

☐ I/we plan to bring our own HP-65 and use it during the course. There is no charge including use of special magnetic program cards.

☐ Purchase of DWCI HP-65 Special Pre-Recorded Magnetic Program Cards:
- ☐ Inter-System EMI Prediction: $50
- ☐ Intra-System EMI Prediction: $50

☐ Purchase of DWCI EMC Handbooks (not included in course) at 30% discount up to last day of course only.

(Please use the registration form on the other side if you wish to register for more than one EMC Training Course).

Would you like us to register one or more of your people at a suitable motel/hotel? ☐ No; ☐ Yes, please

Register the above _____ student(s) for _____ days.

Please indicate the method of payment for the EMI/EMC Training Course
(make checks payable to Don White Consultants, Inc., EMC Training School):

☐ Please Bill: ☐ Me ☐ Company

☐ Purchase Order & Check Enclosed

☐ Purchase Order Enclosed; Check to Follow

☐ Purchase Order & Check to Follow

Tear out and mail

DON WHITE CONSULTANTS, INC.
14800 Springfield Road
Germantown, Maryland 20767

PHONE: 301-948-0028

TLX 89-2766 DWCI GTWN

EMC TRAINING COURSE REGISTRATION FORM

Fall 1974

Gentlemen:

Please register the following student(s):

Name: _____ Title: _____

Name: _____ Title: _____

Name: _____ Title: _____

Name: _____ Title: _____

Your Company/Agency _____

Your Department/Division _____

Street Address _____

City _____ State _____ Zip _____

Phone: Area Code _____ Number _____ Extension _____

For the following Course (Mark with "X"):

- ☐ EMC-Design & Measurement for Control of RFI/EMI
- ☐ MIL-STD-462/462B EMI Testing & Clinic
- ☐ Prediction & Analysis for Control of EMI
- ☐ EMI Control in Design & Installation of Computers
- ☐ FCC & CISPR EMC Specifications and Measurements
- ☐ Mobile Communications

Write in Course Location:

_____

Write in Course Dates:

_____ 1974

Options for Registered Students Only:

☐ I/we can attend only one or two days of either a 3-day or 5-day training course. The one and two day registration fee includes instructional material covering that period and coffee/coke breaks:

☐ Single day at $175 (state which day: _____)

☐ Two days at $285 (state which days: _____)

☐ Rental of Hewlett-Packard Model 65 Hand-Held Computer (during the courses in which it is used) including rental of special magnetic program cards: $75

☐ I/we plan to bring our own HP-65 and use it during the course. There is no charge including use of special magnetic program cards.

☐ Purchase of DWCI HP-65 Special Pre-Recorded Magnetic Program Cards:
- ☐ Inter-System EMI Prediction: $50
- ☐ Intra-System EMI Prediction: $50

☐ Purchase of DWCI EMC Handbooks (not included in course) at 30% discount up to last day of course only.

(Please use the registration form on the other side if you wish to register for more than one EMC Training Course).

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☐ Please Bill: ☐ Me ☐ Company

☐ Purchase Order & Check Enclosed

☐ Purchase Order Enclosed; Check to Follow

☐ Purchase Order & Check to Follow

Tear out and mail

DON WHITE CONSULTANTS, INC.
14800 Springfield Road
Germantown, Maryland 20767

PHONE: 301-948-0028

TLX 89-2766 DWCI GTWN

COURSE PRICES & QUANTITY DISCOUNT

The price of a course per student is either $375 or $395 for a 3-day course, and either $550 or $575 for a 5-day course, payable in advance. Course prices are shown at the bottom of each course listed herein and vary somewhat because of the amount of handout material and whether or not the HP-65 computer is used. If payment is received after the end of course, the prices are $425 and $625 respectively.

There exists a quantity discount for more than one student from the same organization (company or agency) as follows:

Number of Students	Deduct
1	NA
2	5%
3	10%
4	15%
5 or more	20%

REGISTRATION

To assure maximum student participation and instructor attention to individual student needs and problems, EMC Training Courses in Fall 1974 are limited to 10 to 24 students, depending on the particular course. This will now avoid overcrowding that has occurred at times. Thus, at the risk of appearing urgent, registration for any one or more Fall 1974 courses should be made at the earliest possible date. When the class quota is filled, further registrations will be acknowledged, but will not be accepted.

Applicants may cancel up to 10 days before the course begins and receive 100% credit toward another DWCI training course; thereafter, or for *no show*, no refund is made. Substitutions may be made at any time.

Two registration forms (one on each side of page) appear on earlier pages for your convenience. If you desire to register for more than one EMC training course, please execute separate forms.

WANT MORE INFORMATION?

If you would like to receive a detailed syllabus containing a greatly amplified outline of any one or more EMC training courses, you are invited to use the convenient return postal card below. Merely check off the desired information and drop the card in the mail. No postage or addressing is necessary.

If you need information in a hurry or would like to pre-register, phone us at 301-948-0028 or TLX 89-2766 DWCI GTWN. If you wish to attend the 5-day EMC course in Munich Germany, contact us or Simac Electronics b.v., Eindhovenseweg 58, Steensel, Netherlands. Phone (04970)-2011 or TLX51037.

EMI/EMC HANDBOOKS AND TEXTS

Vol. 1 – EMC Specifications & Standards ($38.50)
Vol. 2 – EMI Measurement Techniques ($42.00)
Vol. 3 – Design & Control Methods ($49.50)
Vol. 4 – EMI Instruments & Systems ($41.00)
Vol. 5 – EMI Prediction & Analysis ($46.50)
Five Volume EMI/EMC Handbook Set ($173.00)
Electrical Filters – Theory & Practice ($30.00)
Acronyms & Abbreviations ($16.50)

ORDERING INFORMATION

Take advantage of a price reduction by ordering the entire five-volume set. Save postage and handling (65¢ per volume) by both ordering now and pre-paying. Also, order multiple copies and benefit from discount. For foreign orders, add $1.50 per volume for additional postage and handling. Add 4% sales tax for Maryland deliveries. Discounts of 10% are available to Universities and 30% to Book Stores. All handbooks are sold on a ten-day, money-back guarantee. Make checks payable to DON WHITE CONSULTANTS, INC.

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PAST DWCI TRAINING SCHOOL PARTICIPANTS

Aberdeen Proving Ground – Aberdeen, Md.
AEL Israel, Ltd. – Ashdod, Israel
Amecom, Litton – College Park, Md.
ARINC – Annapolis, Md.
Army Missile Command – Redstone Arsenal, Ala.
Army Security Agency – Arlington, Va.
Atomic Energy of Canada – Chalk River, Ontario
Automatic Electric – Brockville, Ontario
Bailey Meter – Wickliffe, Ohio
Barringer Research – Toronto, Canada
Beech Aircraft – Wichita, Kansas
Bell Canada – Toronto, Canada
Bell Helicopter – Ft. Worth, Tex.
Bell Northern Research – London, Canada
Bell Northern Research – Ottawa, Ontario
Bell Telephone Labs – Greensboro, N.C.
Bell Telephone Laboratories – Indianapolis, Ind.
Bell Telephone Laboratories – Holmdel, N.J.
Bell Telephone Laboratory – North Andover, Mass.
Bell Telephone Laboratories – Whippany, N.J.
Boeing Vertol – Philadelphia, Pa.
Bureau of Radiological Health – Rockville, Md.
Burroughs Corp. – Goleta, California
Burroughs Corp. – Pasadena, California
Canadian Forces – Ottawa, Canada
Canadian Marconi Co. – Montreal, Canada
Canadian General Electric – Peterborough, Canada
Canadian Standards Assn. – Rexdale, Canada
Cardiac Pacemakers, Inc. – St. Paul, Minn.
Chamberlain Manufacturing Corp. – Chicago, Ill.
Communications Canada – Toronto, Canada
Computing Devices of Canada – Ottawa, Canada
Detroit Diesel Allison – Indianapolis, Ind.
Eastman Kodak – Rochester, N.Y.
Elta Electronics – Ashdod, Israel
Emergency Care Research – Phila. Pa.
E.S.L., Inc. – Sunnyvale, Calif.
European Space Technology Center, ESRO – Noordwijk, Holland
External Affairs, Tele. Comm. Act. – Ottawa, Can.
FAA – Alaska
FAA – Atlantic City, N.J.
Fairchild Space & Electronics Co. – Germantown, Md.
FCC – Washington, D. C.
FMC Ordnance – San Jose, Calif.
Ford Motor Co. – Dearborn, Mich.
Forest Service, USDA – Washington, D. C.
Fort Huachuca – Arizona
Frankford Arsenal, U.S. Army – Philadelphia, Pa.
Gautney & Jones Comm., Inc. – Falls Church, Va.
General Electric Co. – Syracuse, N.Y.
Goddard Space Flight Center – Greenbelt, Md.
Goodyear Corp. – Akron, Ohio
Griffiss Air Force Base, U.S. Army – Rome, N.Y.
Gulton Industries Inc. – Hawthorne, Cal.
Hallicrafters Co. – Rolling Meadows, Ill.
Harry Diamond Labs – Washington, D. C.
Hazeltine Corp. – Greenlawn, N.Y.
Hewlett-Packard – Colorado Springs, Colo.
Hewlett-Packard – Loveland, Colo.
Hewlett-Packard – McMinnville, Ore.
Hewlett-Packard – Waltham, Mass.
Hewlett-Packard – Sunnyvale, Calif.
Honeywell, Inc. – Framingham, Mass.
Honeywell, Inc. – Minneapolis, Minn.
Honeywell, Inc. – Oklahoma City, Okla.
Honeywell, Inc. – St. Petersburg, Fla.
IBM – Armonk, N.Y.
IBM – Boulder, Colo.
IBM – Gaithersburg, Maryland
IBM – Huntsville, Ala.
IBM – Kingston, N.Y.
IBM – Lexington, Ky.
IBM – Owego, N. Y.
IBM – Research Triangle Park, N.C.
IBM – San Jose, Calif.
IBM – Yorktown Heights, N.Y.
I.E.E., Inc. – Van Nuys, Calif.
Information Storage Systems – Cupertino, Calif.
Inst. de recherche de l'Hydro–Quebec – Quebec, Canada
Inst. of Telcom Sciences – Boulder, Colo.
Jet Propulsion Lab – Pasadena, Calif.
Kaiser Aerospace & Electronics – Palo Alto, Cal.
Keesler AFB – Biloxi, Miss.
Lear Siegler, Inc. – Grand Rapids, Mich.
Lear Siegler, Inc. – Santa Monica, Calif.
Lockheed M&S Co. – Sunnyvale, Calif.
Lorain Products – Lorain, Ohio
Magnavox – Torrance, Calif.
Manitoba Hydro – Winnipeg, Canada
Mare Island Naval Shipyard – Vallejo, Cal.
Martin Marietta Aerospace – Orlando, Fla.
McDonnell Douglas Co. – Huntington Beach, Cal.
Measurex Corp. – Cupertino, Cal.
MB Associates – San Ramon, Cal.
Medtronic Inc. – Minneapolis, Minn.
Metal Bellows – Chatsworth, Calif.
MGD Graphic Systems – Chicago, Ill.
Microwave Communications, Inc. – Wash., D.C.
Milwaukee Electric Tool Corp. – Brookfield, Wis.
Ministry of Transport – Ottawa, Canada
Ministry of Transport – Toronto, Canada
Ministry of Transportation & Communications – Ontario, Canada
Mitre Corp. – Bedford, Mass.
NASA, Goddard – Greenbelt, Md.
NASA, Marshall – Huntsville, Ala.
National Bureau of Standards – Boulder, Colo.
National Bureau of Standards – Gaithersburg, Md.
National Cash Register Canada Ltd. – Waterloo, Ontario
National Cash Register – Dayton, Ohio
National Cash Register – San Diego, Calif.
National Defense Headquarters – Ottawa, Canada
National Institutes of Health – Bethesda, Md.
National Research Council – Ottawa, Canada
National Security Agency – Ft. Meade, Md.
National Weather Service – Silver Spring, Md.
Naval Avionics Facility – Indianapolis, Ind.
Naval Air Rework Facility – Jacksonville, Fla.
Naval Air Sys. Cmd. – Washington, D. C.
Naval Air Test Center – Patuxent, Md.
Naval Ammo Dept. – Crane, Ind.
Naval Electronics Sys., Washington, D.C.
Naval Ordnance Lab.–White Oak, Md.
Naval Plant Office – Sunnyvale, Calif.
Naval Research Lab. – Washington, D.C.
Naval Security Engrg. Facility – Wash., D.C.
Naval Ship Engrg. Center – Hyattsville, Md.
Naval Weapons Laboratory, Dahlgren, Va.
NOAA – Rockville, Md.
North American Rockwell – Anaheim, Calif.
Northern Electric Corp. – London, Canada
Oklahoma City AFS – Oklahoma City, Okla.
Pacific Gas & Electric Co. – San Francisco, Calif.
Pacific Telephone Co. – San Francisco, Calif.
Pertec – Santa Ana, Cal.
Philco-Ford Corp. – Colorado Springs, Colo.
Philco-Ford – Willow Grove, Pa.
Picatinny Arsenal, US Army – Dover, N.J.
Plectron Corp. – Overton, Neb.
Prestolite Co. – Toledo, Ohio
Promon Engenharia SA – Sao Paulo, Brazil
Radiation – Melborne, Fla.
Raychem Corp. – Menlo Park, Calif.
Raytheon Co. – Bedford, Mass
Raytheon Co. – Goleta, Cal.
Raytheon SSD, Portsmouth, R.I.
Redstone Arsenal, U.S. Army – Huntsville, Ala.
Robins AFB – Georgia
Royal Canadian Mounted Police – Ottawa, Canada
SAMSO, USAF – Los Angeles, Calif.
Scott Electronics Corp. – Orlando, Fla.
Sperry Univac – St. Paul. Minn.
STRATCOM, US Army – Ft. Huachuca, Arlz.
Tank Automotive Command, US Army – Mich.
Teledyne Ryan – San Diego, Calif.
Teletype Corp. – Skokie, Ill.
Test & Evaluation Command – Aberdeen, Md.
Transportation Dept. – Cambridge, Mass.
TRW/Colorado Electronics – Colorado Springs, Colorado
Union Switch & Signal – Pittsburgh, Pa.
UNIVAC – Salt Lake City, Utah
U.S. Department of State – Washington, D.C.
U.S. Naval Ship R&D Center – Annapolis, Md.
Watkins Johnson – Rockville, Md.
Westinghouse Electric Co. – Baltimore, Md.
Westinghouse Electric Co. – Pittsburgh, Pa.
Wheeler AFB – Hawaii
Xerox Co. – Rochester, N.Y.

Date:_____1974

Gentlemen:

Please send more information on the following:

☐ Detailed Syllabus & related information on the following published EMI/EMC Fall 1974 Courses:

☐ Design & Measurement for Control of EMI
☐ Prediction & Analysis for Control of EMI
☐ MIL-STD-462/462B EMI Testing & Clinic
☐ FCC & CISPR EMC Specs & Measurements
☐ EMI Control in Design & Installation of Computers

☐ Technical & price information for conducting one of your ☐ 3-day, ☐ 5-day courses at my facility

☐ For Reference Only ☐ Course to be held within ☐ 3 months, ☐ 6 months, ☐ 1 year

☐ Technical & price information on your 5-Volume Handbook Series on EMI/EMC

Your Name_____ Title_____

Your Company/Agency_____ Dept/Div._____

Address_____ Phone_____ Ext._____

City_____ State_____ Zip_____ Country_____

Tear along perforated line & mail.

Historical: E.G. GODDARD, 2522 Webster St., Palo Alto 94301; (415) 325-2522 or (408) 732-2710.

Legal Counsel: T.E. SCHATZEL, Schatzel & Hamrick, 1333 Lawrence Expressway, Santa Clara 95050; (408) 249-2020.

Program: R.J. WHITTIER, Section Vice Chairman.

Public Advisor: ED JACKSON, Section Chairman.

HADI MONSEF J.J. McCANN

Publicity and Public Relations: HADI MONSEF, Bechtel Corp., P.O. Box 3965, San Francisco 94119; (415) 764-6659.

SFBA Engineering Council Delegate: J.J. McCANN, PG&E Co., 77 Beale St., Room 2639, San Francisco 94106; (415) 781-4211 x 2293.

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Santa Clara Valley: Vice Chm: C.R. GILLILAND, Barry Research Corp., 1530 Page Mill Road, Palo Alto 94304; (415) 493-6800. Secretary: J.A. KIRTLAND, FMC Corp., OED, Box 1201, San Jose 95108; (408) 289-3342. Treasurer: STEVE G. ROLL, Underwriters Lab, 1655 Scott Blvd., Santa Clara 95050; (408) 243-3600.

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TECHNICAL INTEGRITY IN A MANUFACTURING CORPORATION

The Engineering Management Society will be addressed by Dr. Frank Boxall on "The Many Facets of Technical Integrity in a Manufacturing Corporation" at their meeting on September 17. Technical integrity is an explicit component of corporate objectives, and it is vulnerable to competing forces within an organization.

Dr. Boxall, Ph.D. Stanford, has had twenty years background in development and manufacture of telecommunications equipment. In 1964 he founded VICOM Corp. to manufacture and supply PMC carrier systems to the independent telephone industry. This later was acquired by Contiental Telephone Corp. Dr. Boxall served as Senior Scientist to CTC through 1971, when he became an independent consultant.

EMB - ARRYTHMIA DETECTION OF THE ELECTROCARDIOGRAM

This is the first of a three part series on the Arrythmia Detection of the Electrocardiogram. The meeting will be held at the U.C. Medical Center HSW# 300 at 8 PM. Dr. Herman Uhley, Cardiologist at Mt. Zion Hospital, San Francisco will be our speaker. He will begin with the normal sinus rhythm of the ECG, explaining its electrical derivation and then will delve into the abnormal beats, such as PVC's, PAC's, missing P's, depress ST's, inverted T's and others.

Dinner will be held at 6 PM, at the Chuck Wagon, 215 West Portal, S.F. For information and reservations, call Barbara Brasfield, (415) 525-1113.

MISAPPLICATION OF GROUND FAULT SYSTEMS

The Industry Applications Chapter will hear John Moore, President of Electrotest, Inc., discuss various types of ground fault systems, their characteristics and misapplications. Electrotest is an independent testing organization, and has performed several hundred performance tests on ground fault systems in the field. John will draw upon that field testing experience to print out several design misapplications which result in ground fault systems that are insensitive to ground faults. His presentation will include slides of equipment and diagrams.

PES/ASME TO VISIT "GEYSERS"

The Power Engineering Society and the American Society of Mechancial Engineers have made plans for a joint tour of PG&E's "The Geysers", on Saturday, Sept. 28th. This installation, now the largest power producing geothermal installation in the world, has 396,000 kW of generating capacity. There are 10 operating units and an 11the under construction.

The tour will originate at PG&E's headquarters at 77 Beale St., San Francisco, at 8:30 AM. Travel will be by Greyhound Bus which will return to SF by 4 PM. The tour is open to all PES and ASME members. Those with young adults of High School age or older are encouraged to bring them along. Reservations are required and can be made by calling Carol Franke at 781-4211 x 1442. Other details concerning the outing arrangements can be obtained at the time of reservations. A flyer announcement will be mailed later.

ELECTROMAGNETIC COMPATIBILITY TECHNICAL MEETING OF AMPLIFIER APPLICATIONS IN ACTIVE FILTERING

The Electromagnetic Compatibility Chapter will feature a presentation of applications of operational amplifiers for active filtering. The design consideration for the required amplifier parameters including the frequency range, cost impact and packaging will be discussed. Handouts will be provided as guides for practical design applications.

This talk is authored and presented by Mr. Maise Hamaoui of Fairchild System Technology of Mountain View. The speaker holds Electrical Engineering degrees of BS from Syracuse University and MS from University of Santa Clara.

GGSS - IEE IN THE BAY AREA

The Section's role in Bay Area IEEE activities and the possible upgrading activities of the Golden Gate Subsection to full Section status will be discussed by Ed Jackson, Chairman of the SF Section.

Activities planned for the new Professional Activities Committee will be discussed by Bill Raukko, Committee Chairman.

Metropolitan SF IEEE activities will be discussed by Leon Glahn, GGSS Chairman.

IS NUCLEAR POWER REALLY SAFE? THE SIERRA CLUB vs. THE POWER INDUSTRY

Safety assessments of nuclear power by conservation groups stands in strong contrast with those presented by the power industry. The Reliability Group will present a debate on the evening of September 18th, between Dr. Russell M. Ball of Babcock & Wilcox and the Electric Power Research Institute, and Dr. Alan Tucker of the Sierra Club and San Jose State University.

Dr. Ball is employed by Babcock & Wilcox and currently is assigned to the technical staff of the nuclear division of the Electric Power Research Institute. He has been panelist and US representative to two International meetings on nuclear reactor instrumentation and control and computer utilization. He received his Ph.D. from the University of Virginia.

Dr. Alan Tucker received his Ph.D. in Physics from Stanford in 1965. He is an Associate Professor of Physics at San Jose State University. He has been active in nuclear structure research as an Associate Physicist at the AEC's Ames Laboratory and as a visiting staff member at the Los Alamos Scientific Laboratory. As a Sierra Club member, he is serving on the Executive Committee of the 15,000 member Loma Prieta Chapter and also is on the California Energy Task Force.

MEMBERS - ASSISTANCE NEEDED - QUICK REACTION NETWORK

Starting this fall there will be established at the S.F. Section IEEE office a communication center for the purpose of providing our organization a quick reaction network in response to legislative activities in Sacramento and the Congress, as an example. In order to do this effectively, we will need a few minutes of your time to receive and disseminate vital information which comes out of our statewide and national organization.

cut here and mail

Following is a self-addressed stamped questionnaire requesting your active support in this effort. Upon receipt of an affirmative answer from you, we will place you on our active mailing list so that you will receive in-depth background briefing of the activities of PAC.

QUESTIONNAIRE - S.F. SECTION PAC

Please check one

____ Yes, I will be available for active participation in the quick reaction network.

____ No, I am not interested or available.

____ I am not available at this time but would like to keep in touch.

Comments: _____

_____

Name: _____

Address: _____

City: _____ Zip Code: _____

Telephone: _____

Office Home

See CALENDAR for Program Arrangements