

IEEE

NEWSLETTER



ELECTROMAGNETIC COMPATIBILITY GROUP

EDITOR:

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Re-entry Systems Division
General Electric Co.
608 Gawain Rd.
Plymouth Meeting, Pa. 19462

ADCOM NEWS and VIEWS

Dr. Schlicke Elected Chairman for 1970

During the December 8, 1969 AdCom meeting, elections were held for 1970 officers. The following gentlemen were elected:

Chairman:

Dr. Heinz M. Schlicke
8220 N. Poplar Drive
Milwaukee, Wisconsin 53217

Vice-Chairman:

Mr. James J. Krstansky
3434 W. 72nd Street
Chicago, Illinois 60629

Secretary:

Mr. Leonard W. Thomas, Sr.
1604 Buchanan St., N.E.
Washington, D.C. 20017

Treasurer:

Mr. John J. O'Neil
Mountainside Drive
Colts Neck, N.J. 07723

Zimbalatti Named Membership Chairman

Anthony G. Zimbalatti, of Grumman Aircraft Engineering Corp., Plant 14, Bethpage, L.I., N.Y. 11714 has been named to succeed retiring Stan Bennett as Membership Chairman for the G-EMC Group. Membership has been relatively stagnant over the past few years, remaining in the 1600 to 1800 member range. Engineers are invited to write to Mr. Zimbalatti and express their reasons for joining or not joining the Group or to offer their support. Since our future as an entity and viability as a Technical Group is largely dependent upon total membership, it is important that members assist Mr. Zimbalatti in every way they can. There is no task more important to the AdCom at this time than a successful membership drive. Our best wishes are extended to Mr. Zimbalatti in his new endeavor.

1969 G-EMC Symposium A Financial Success

John J. O'Neil and the 1969 Symposium Committee have been congratulated by Fred Nichols, chairman of the G-EMC AdCom for the financial condition of the Symposium. The surplus of \$8,847.16 does not include the cost of the symposium records which the AdCom "buys" for G-EMC membership distribution. This amounts to an additional \$2,602.96. This was the most successful financial report over the years of our EMC Symposiums.

These funds offset the deficit G-EMC has had for the year and somewhat justifies our recent membership increase from \$4.00 to \$5.00 rather than an increase to \$6.00.

ORGANIZATION OF DIVISIONS OF TAB

IEEE Officers Elected

New York, N.Y. November, 1969. Dr. John V. N. Granger, Chairman of the Board of Granger Associates at Palo Alto, California, has been elected by the voting members to be President of the Institute of Electrical and Electronics Engineers for 1970.

Dr. Granger succeeds Dr. F. Karl Willenbrock, Provost of the Faculty of Engineering and Applied Sciences at the State University of New York, Buffalo. He will preside over the activities of the world's largest engineering society, having some 160,000 members located throughout the world.

The Directors of IEEE also announced the election by the voting members of Dr. James H. Mulligan, Jr. as Vice President, 1970. Dr. Mulligan is Executive Secretary of the National Academy of Engineering in Washington, D.C. When the Institute's Annual Assembly meets in January, 1970, two additional Vice Presidents for 1970 will be elected.

Reorganization of IEEE Technical Activities

In December, TAB voted on a proposed reorganization plan that will increase technical representation on the IEEE Board of Directors from one to eight. All of these Directors will be members of TAB and responsible for voicing the needs of the 31 Groups. Two of these positions will be occupied by the Chairman and Vice Chairman of TAB.

The remaining six Directors will be distributed amongst the 31 Groups. The only way to effectively accomplish this distribution is to develop a cluster concept. In other words, assign a cluster of Groups to each of the six Directors. Each cluster will be called a Division. Our biggest problem has been to satisfy the many different opinions that have been expressed by the various Groups. To accomplish this, a special TAB Ad Hoc Committee was established and charged with accepting the input from the 31 Group Chairmen, reviewing the scope of each Group within TAB, and to produce a recommended clustering arrangement. Your Chairman is a member of this Ad Hoc and has actively participated in all of its activities.

Groups have been clustered based upon common technicalities, interests and goals. This technique effectively uses the six positions available for technical Directors and provides an excellent coordination medium that may, some time in the future, make merger between Groups more attractive. Each cluster will elect its own Division representative and he, in turn, will serve on both TAB/OpCom and the IEEE Board of Directors.

Two direct channels of communications to the Board of Directors are available to each Group—one via the Divisional Director and one via the Vice President of Technical Activities (TAB Chairman).

The Director elected by the cluster or Division has no line responsibility—he is a coordinator and communicator. Group autonomy remains unchanged. Under this new structure, the EMC Group is still responsible for all existent technical, financial, and administrative areas. We do not have another layer imposed upon us.

DIVISION 1

G-1	Audio & Electroacoustics	4,200
G-4	Circuit Theory	8,000
G-12	Information Theory	4,300
G-23	Automatic Control	6,200
		<u>22,700</u>

DIVISION 2

G-16	Computer	13,700
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DIVISION 3

G-2	Broadcasting	1,800
G-8	Broadcasting & TV Receivers	2,100
G-10	Aerospace & Electronic Systems	8,000
G-19	Communication Technology	8,100
G-27	Electromagnetic Compatibility	1,600
		<u>21,600</u>

DIVISION 4

G-3	Antennas & Propagation	4,500
G-15	Electron Devices	8,200
G-17	Microwave Theory & Techniques	5,900
G-20	Sonics & Ultrasonics	1,100
G-21	Parts Materials & Packaging	1,900
G-33	Magnetics	1,900
		<u>23,500</u>

DIVISION 5

G-5	Nuclear Science	2,200
G-6	Vehicular Technology	2,000
G-9	Instrumentation & Measurement	4,200
G-13	Industrial Electronics & Control Measurement	2,900
G-31	Power	12,100
G-32	Electrical Insulation	1,100
G-34	Industry & General Applications	4,500
		<u>29,000</u>

DIVISION 6

G-7	Reliability	2,200
G-14	Engineering Management	5,700
G-18	Engineering in Medicine & Biology	4,300
G-25	Education	1,700
G-26	Engineering Writing and Speech	1,900
G-28	Man-Machine Systems	1,200
G-29	Geoscience Electronics	1,400
G-35	Systems Science & Cybernetics	3,800
		<u>22,200</u>

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MEETINGS and EVENTS

Region Six Conference to be Held May 26-28, 1970

Prospective authors are requested to submit papers for the various sessions of the IEEE Sixth Region Conference to be held at the Washington Plaza Hotel, Seattle, Washington, May 26-May 28, 1970. Only papers that have not been previously printed or published will be presented.

Sessions in the following areas are scheduled:

1. POWER - Session Chairman: E. J. Harrington, Bonneville Power Administration, Portland, Oregon.
Topics: Reliability of Interconnected Systems, Environment Considerations--Generation and Transmission, Automation and Computerization of Controls.
2. CONTROL THEORY AND APPLICATIONS Session
Chairman: P.R. Johannesen, Sylvania Applied Research Labs., Waltham, Mass.
Topics: Applications of Optimal Control Theory.
3. COMPUTER APPLICATIONS - Session Chairman: J. Andersen, University of Washington, Seattle, Washington.
Topics: Computer Aided Network Analysis.
4. EMC-RFI Session Chairman: W. Cooley, Seattle University, Seattle, Washington.
Topics: All papers invited by session chairman.
5. BIOENGINEERING Session Chairman: C. Johnson, University of Washington, Seattle, Washington.
Topics: Future trends in health care delivery, Medical Instrumentation. Some papers to be invited by session chairman.
6. LASER APPLICATIONS Session Chairman: B. Hildebrand, Battelle Northwest, Richland, Washington.
Topics: All papers invited by session chairman.
7. OCEAN ENGINEERING Session Chairman: S. Murphy, University of Washington, Seattle, Washington.
Topics: All papers invited by session chairman.
8. INDUSTRY AND GENERAL APPLICATIONS Session
Chairman: J. Skog, Beverly A. Travis and Associates, Seattle, Washington.
Topics: Electric Transportation.

Two EMC Sessions at IEEE Convention

This year there will be two EMC sessions at the 1970 IEEE Convention on March 23-26, 1970. One will be sponsored by the G-EMC and the other by the Technical Applications Committee (TAC) of the IEEE. This will be the first TAC program presented at the IEEE Convention. The program will be directed toward the day-to-day needs of the typical engineer who attends the convention but who generally does not attend technical sessions.

The Applications Program will include sessions on interference reduction, microwaves, infrared testing, small computer and time share applications, and hybrid IC's. The session entitled "How to Reduce Interference in Electronic Equipment" will contain four papers as follows:

Session Organizer: Mr. Melvin M. Morriss
U.S. Army Electronics Command
Code AMSEL-WL-V
Fort Monmouth, New Jersey 07703

Technical Papers:

1. "System Engineering for Interference Control"
Author: Anthony G. Zimbalatti, Grumman Aerospace Corporation
2. "Control of Signal Path to Reduce Unwanted Pickup"
Author: O. M. Salati, University of Penna.
3. "Designing for the Reduction of Nonlinearity Effects in Receiver Circuits"
Author: W. Y. Pan and R. L. Ernst, RCA, Defense Advanced Communication Labs.
4. "The Control Plan-Key to Meeting EMI Specifications and Standards"
Author: J. F. Brorok and B. C. Miller

The session (48) sponsored by the G-EMC entitled "Progress in the EMC Field" will be as follows:

Mr. Fred J. Nichols, President of LMI will serve as Organizer and Mr. A. H. Sullivan, Jr., office of Asst. Chief of Naval Operations, will serve as Chairman of the AdCom sponsored session.

1. "Intra-Systems Compatibility in Large Aerospace Systems" by James A. Spagon, TRW/Redondo Beach, California
2. "EMC Management Techniques in Complex Electronic Systems" by A. G. Zimbalatti, Grumman Aircraft Corp/Bethpage, N.Y.
3. "Electromagnetic Compatibility in Modern Computer Systems" by W. P. Tohner, IBM Corp./San Jose, California
- 4a. "Progress Report and Future Needs of DOD in EMC" by J. P. Georgi, ECAC/Annapolis, Md.
- 4b. "Report Legislation and Future Requirements of the FCC and Industry in EMC" by H. Garlan, FCC/Washington, D. C.

Philadelphia Chapter to Conduct an EMC Seminar

The Philadelphia Chapter of the G-EMC is planning a one day Seminar on EMC. The event will be conducted at the University of Pennsylvania, Moore School of Electrical Engineering on May 19, 1970, and is being planned and organized by the Chapter Chairman, Vern Bashaw. The seminar will include papers from members of the FCC, National Electrical Manufacturers Association and Biomedical Electronics. Although the full agenda is not finalized at the time of this writing, it promises to be a most enlightening affair, followed by a regular chapter meeting in the evening. For additional information, write to Vern Bashaw, EMC Consultant, General Electric Co., 3198 Chestnut Street, Philadelphia, Pa. 19101.

International Conference on Communications

The 1970 IEEE International Conference on Communications (ICC 70) will be held at the San Francisco Hilton Hotel in San Francisco, California, June 8-10, 1970. ICC 70 is sponsored by the Communications Technology Group and the San Francisco Section of the IEEE. Eight professional groups will be participating in the organization of technical sessions for the meeting.

Featuring the theme "Communications in the Development of Nations" the conference will concentrate on key areas in communications such as wire, radio, space, telemetering, data, communication theory, switching, and systems, and communication antennas and propagation.

Modern Filter Synthesis Techniques - Short Course

A five day short course on Modern Filter Synthesis Techniques is being offered by the University Extension, UCLA., in April 27 - May 1, 1970. The purpose of the course is to provide an up-to-date summary of the theory and design techniques for filters and a wide background in the most modern filter design techniques.

For additional information, write P.O. Box 24902, Engineering and Physical Sciences Extension, UCLA, Los Angeles, Calif. 90024 or phone (213) 825-3344. A short course on Systems Engineering (April 20-24) and Systems Engineering Management (April 27-May 1) are also offered and information is available from the same address.

International Microwave Symposium

The 1970 IEEE G-MTT International Microwave Symposium will be held on May 11-14, 1970 at the Newporter Inn, Newport Beach, California.

The symposium will be a comprehensive unclassified technical program covering the important new developments pertinent to the field of microwave theory and techniques.

Original papers on subjects in the following areas will be presented:

- Computer oriented microwave practices
- Microwave microelectronics
- Solid state sources and devices
- Noise in solid state devices and systems
- Microwave integrated circuits
- Microwave physics and materials
- Microwave acoustics
- Microwave aspects of optoelectronics and holography
- Microwave signal processing
- Ferrite devices
- Microwave power engineering
- Millimeter wave components and systems
- Microwave components and measurement techniques

For additional information, write to:

Dr. Raymond H. DuHamel
Chairman, Technical Program Committee
Granger Associates
1601 California Avenue
Palo Alto, California 94304

1970 Microwave Power Symposium - Call for Papers

IMPI's Fifth Annual Microwave Symposium will be held at the Hotel Kurhaus, Scheveningen, Holland (the Hague) on October 7, 8, 9, 1970.

Original papers are being solicited that represent new contributions to microwave applications in the following areas:

- Properties of Materials - - Food and Biological
- Properties of Materials - - Non-Food
- Microwave Induced Chemical Processes
- Applicator Theory and Techniques
- Industrial Microwave Systems
- Microwaves in the Food Industry
- Microwave Power Generation
- Medical Applications and Biological Effects

Deadline for all submissions is May 31st, 1970.

For additional information, contact:

W. A. G. Voss
Department of Electrical Engineering
The University of Alberta
Edmonton 7, Canada

The Symposium is under the general chairmanship of D. J. Goerz, Jr., Bechtel Corporation, 50 Beale Street, San Francisco, CA 94119, USA telephone 415/764-5329.

All inquiries regarding Symposium matters other than technical program should be addressed to the Symposium Chairman.

WEI/TSD Training Schedule

The Technical Services Division of White Electromagnetics is expanding its training program and announces the schedule of courses and seminars for the first half of 1970.

New EMC System Design Course

On January 26th a five-day training course in EMC SYSTEM DESIGN will be offered. The course will cover the manner in which system design controls specific requirements imposed upon components, assemblies, and subsystems. Design philosophy with specific application to environmental ambient conditions as well as intra-system inter-relationships will be presented. Assembly, equipment, and sub-system interface problems with respect to overall system constraints will be covered in detail. System grounding concepts and practices will be treated, as will inter- and intra-system cabling design. In addition, seminar discussions will treat specific system design problems of individual class members.

MIL-STD-462 Testing Offered Again

MIL-STD-462 TESTING, a five-day training course directed towards the technician and the engineer performing qualification tests on electronic equipment which carries MIL-STD-462 as a requirement, begins on February 2nd. The major topics covered in this course are test instrumentation, testing in shielded enclosures, test methods and techniques, manual test procedures, automatic test procedures, calibration, and test set-up configuration requirements. In addition to classroom sessions, laboratory demonstrations of actual EMC measurements will be presented. This course was presented twice last year and will be conducted again on April 6th and on June 1st.

EMC Analysis Seminars

On March 17th and 18th a two-day seminar, EMC ANALYSIS FOR PROPOSAL PREPARATION AND EVALUATION, will be conducted at the WEI/TSD Rockville facilities. The objective of this seminar is to provide attendees with the philosophy and methodology for critical analysis of generated EMI susceptibility, filtering, shielding, and grounding of system and sub-system hardware.

A pragmatic approach to the EMC analysis will be taken at this seminar.

As a convenience to interested parties to whom location presents an insurmountable travel problem, WEI/TSD plans to offer this seminar in Dallas, Texas, on April 16th and 17th; in Los Angeles, California, April 20th and 21st; and in Chicago, Illinois, May 19th and 20th.

WEI/TSD Staff

Under the direction of H. Dean McKay, Director of the Technical Services Division of WEI, the staff has been selected on the basis of formal training and professional experience required to provide a wide capability in EMC technology and formal condensed training.

Address inquiries to: Technical Services Division, White Electromagnetics, Inc., 656 Lofstrand Lane, Rockville, Maryland 20850, Attn: Erin Whelan, Technical Editor, or call Dean McKay, Director, or Art Mann, Training Administrator, at (301) 424-2900.

SAE AE-4 Plan Meetings

Plans for the second Lightning and Static Symposium to be held in San Diego in December 1970 are being made. The AE-4 fall meeting will be held in conjunction with this symposium. The tentative schedule is as follows: December 7th, AE-4 Executive Committee meeting; December 8th, AE-4 National Committee meeting; December 9, 10, & 11 the Lightning Symposium. R. M. Stimmel will be the program chairman and Claude Austin of ASD will participate as the program coordinator.

The spring meeting, No. 26, will be held at the New Orleans Roosevelt Hotel on May 20 thru May 22, 1970. The 1971 spring meeting (No. 28) will be held in Denver, Colorado on May 19 thru 21, 1971. Plans for the 1971 fall meeting are not firm at this time.

EIA G-46 EMC Committee to Meet

The next meeting of the EIA EMC (G-46) Committee will be held at the Electronic Industries Association office in Hollywood, February 4 and 5. The address is 1717 North Highland, Suite 316, Hollywood, Calif. 90028 (Tel. 213-462-1228). This will be a special meeting to consolidate comments on a proposed MIL Spec. mailed to members on December 15, entitled "Electromagnetic Compatibility Requirements, Systems".

The next regular G-46 meeting will be held in Washington, D. C. at the EIA office on March 19 and 20, 1970.

ADCOM STANDING

on Long



Committee Chairman:

Dr. Heinz Schlicke
Chief Scientist
Allen-Bradley Company
8220 N. Poplar Drive
Milwaukee, Wisconsin 53217

H. M. Schlicke received his Master's and Doctor's degrees in Engineering Sciences under Professor Barkhausen (Electron-Jesus) from the Institute of Technology, Dresden, Germany. After working in the Laboratory for Large Transmitters at Telefunken, Berlin, he served in German Naval Research, guiding projects of large scope. After the war, he was captured as Lt.-Cdr. aboard a submarine on special scientific missions and became a so-called "paper clip" scientist and project engineer at the Office of Naval Research. Since 1950 he has been with the Allen-Bradley Company, Milwaukee, Wisconsin, where he is now, after managing various laboratory groups, Chief Scientist, essentially engaged in new product planning.

He has published more than 30 articles in the Journal of Applied Physics, Proceedings of the IEEE, etc. His book, Essentials of Dielectromagnetic Engineering (John Wiley, 1961) also appears in French (Dunod, Paris, 1965). He is the invited contributor to four books, among them: The Molecular Designing of Materials and Devices (von Hippel, editor), [Section: Mutual Substitution of Networks and Materials], MIT Press; EMC Handbook (R. Ficchi, editor) [Section: Filtering] (in press). He was twice invited guest lecturer in summer sessions held by the Massachusetts Institute of Technology. Fifteen patents are to his name, quite a number are pending.

His recent publications in EMC are:

- (a) Compatible EMI Filters, IEEE Spectrum, Oct. 1967.
- (b) Guest editor (and author of survey paper) of special Filter Issue, IEEE Transactions, G-EMC, June, 1968.
- (c) The Controversial MIL-STD-220A (invited paper) IEEE, 1969 International EMC Symposium, Asbury Park, N.J.

He participates extensively in continued education, technical and managerial, and is a Registered Prof. Eng. (Wis.), past chairman of the Milwaukee Section of the IRE, Vice Chairman of the Electronics Industry Sub-Committee of the Wisconsin State Industry Advisory Committee, Chairman IEEE, G-EMC, and member of the editorial board IEEE Transactions, G-EMC. He is listed in American Men of Science (Suppl. V). He is a Fellow of the IEEE and AAAS.

COMMITTEE

Range Planning

activities

The Committee on Information Dissemination, having been of limited scope, is being replaced by the Committee on Long Range Planning, being formed now, to insure a continued growth and viability of the EMC group in the face of anticipated challenges (including the one of cluster formation within the IEEE).

EMC is spreading more and more into other disciplines and is becoming more and more a key consideration in the planning of many areas of endeavor, where EMC was of no concern heretofore. (To cite just one example: In the Machine Tool Industry, EMC is being given serious consideration: In an automobile factory, they do not like at all a loss of \$1,500/minute because of downtime cost by what they call "Electrical Noise." And they do have to worry about that because in modern industrial control, the interfering power (SCR's) has increased several decades and the susceptibility (of IC's) is several decades higher compared to those levels prevailing in the older contractor and relay technology.)

It is, however, this very fact of its spreading into many new areas that we must look at EMC in a broader perspective such that we obtain or maintain a leading position in EMC.

On the one hand, more and more committees are being formed trying to organize specific areas of EMC (within IEEE groups, in industrial societies, in the military, etc.), indicating that spectrum pollution worsens probably at the same alarming rate as water and air pollution do.

On the other hand, our membership is static, we have insufficient liaison and co-ordination with the groups mentioned above (there is just too much proliferation) indicating that we are not in control of the situation, do not exploit an excellent opportunity, rather may drift into mediocrity or even obsolescence.

We are going to do something about this. And we intend to do this in a very systematic way, in a similar way as planning for survival is done in industry.

Our tentative 2-part plan for Long Range Planning is as follows:

I. ENVIRONMENTAL FORECASTING (What will be the future and how will we be affected?)

In particular, we shall first have to answer the following questions:

1. What is ahead in EMC?
2. Where do we stand?
3. What are our strengths and weaknesses?
4. What can we predict?
5. What challenges will we have to face?

II. EMC FORECASTING SPECIFIC (What shall we do to have a future?)

1. What are our (redefined) objectives?
2. What alternate strategies do we have?
3. What is the best strategy?
4. What programs?
5. What plans?

The committee on Long Range Planning was formed officially at the ADCOM meeting held on December 8, 1969 in Chicago. So far, Professor Ralph Showers, Jim Krstansky, and Dr. Schlicke are members of this committee. A rather long, orienting letter has been sent to all ADCOM members, explaining our objectives and asking for volunteers. Comments for participation by the membership at large are welcome.

CHAPTER CHATTER

Hail and Farewell!

The Farewell first: Your Chapter Chatter Editor has bid adieu to the General Electric Re-Entry and Environmental Systems Division. Now, Hail: into the willing arms of Fairchild/Electro-Metrics, to enhance their EMI/C capability, who at the time of my layoff was frantically searching for an EMC cum systems cum digital cum all-around-utility engineer. "Le plus ca change, le plus c'est la meme chose". Except now it's the Mohawk, rather than Delaware, Valley.

Since I have not written anything about the Chapters for several issues, the information has been piling up. (The column in the last issue was written early last July.) We have programs for the activity year, regional symposia, and lots of new officers. In fact, we're just bursting with news!

ATLANTA

Our Georgia Chapter just bubbles over with enthusiasm. They've just concluded their Third Southeastern EMC Symposium, and there are five other meetings on the schedule. The first one was early in season (September 16) so as not to interfere with the Symposium.

Place: Georgia Institute of Technology

Speaker: Mr. B. M. Jenkins, Ga. Tech.

Topic: "Review of EMC Specification Requirements and Inadequacies"

Attendance: 12

Other meetings were held on Nov. 11 and on Jan. 13. The future meetings are planned for Mar. 16 and May 12. The March 1970 meeting will be a Joint meeting with the local Section and will feature a talk by Dr. Irwin E. Perlin of Ga. Tech. on "Frequency Management".

The Chapter sent along a preliminary report of their Symposium on October 27-29. It seemed to be successful technically, and financially as well. However, the Chapter is asking for help on future Symposia, so if any Region 3 Chapter wants to pitch in and help, I'm sure they'll consider your offer.

Atlanta's new officers are:

Chairman: Ramon Smith, Electromagnetic Sciences, Inc.

Vice-Chairman: Dan Matthias, Lockheed-Georgia

Secy-Treasurer: Ed Holmes, Ed Holmes & Assocs.

Pgm Chairman: Ray Howland, Scientific Atlanta

Lots of luck, fellows. It's great to hear news on a continuing basis from our active groups.

BOSTON

Boston, O Boston! Wherefore art thou, Boston? Silence is golden, but this is ridiculous.

CANAVERAL

Sounds like the fellows at the Cape are hanging on by their eyelashes. Now that the Cape is in a very slack period, there just aren't many members around to have meetings with. They still squeak through a few, though.

Date: May 14, 1969

Place: Florida Institute of Technology

Speaker: Mr. Robert N. Hokkanen, Naval Training Devices Center, Orlando, Florida

Topic: EMC at the NTDC

Attendance: 18 (including 2 wives, brave souls)

Date: Sept. 4, 1969

Place: Radiation, Inc.

Speakers: Mr. Robert Marresette and Mr. Terry Bradford, Radiation, Inc.

Topic: Programmable Audio Susceptibility Testing

Attendance: 12

Date: Nov. 5, 1969

Place: Southwest Research Institute, San Antonio, Texas

Speaker: Mr. W. C. Dolle, SWRI

Topic: The Influence of Shielded Enclosure Resonance and Proximity Effect on Electric Field Measurements

Two meetings are planned before the end of the year: one on feed-through connectors and one on conductive gaskets. As of this writing, details were not firm. For 1970, it seems that future work uncertainty will take its toll. The Group will cease formal operation as of Jan. 1, 1970.

CENTRAL TEXAS

The folks in San Antonio and environs may not have the largest Chapter in the Group, but from the topics of their meeting subjects it must surely be one of the best informed.

Date: Sept. 10, 1969

Place: Tracor, Inc., Austin, Texas

Speaker: Mr. John D. Osborn, Electro-Mechanics Co.

Topic: Magnetic Susceptibility Testing of Electronic Equipment

Attendance: 11 members and 4 guests.

How many EMI engineers ever concern themselves with this effect, especially at lower frequencies in small shielded enclosures? It's a subject well worth discussing in every Chapter.

New Officers in the Chapter, as well:

Chairman: G. N. Van Steenberg, SWRI

Vice-Chairman: Carl C. Lambert, Electro-Mechanics Co.

Secy-Treas: O. L. Jouffray, SWRI

And to top off Central Texas' news, two papers were recently presented by Chapter members:

1. Messrs Van Steenberg, Willman, and Dolle, "Shielded Enclosure Measurements Can be Accurate," 21st SWIEECO, April, 1969.
2. Mr. William E. Cory, "The Effects of the Local Environment on Interference Measurements and Prediction," at the National Symposium in Asbury Park last June.

Now, that's active!

CHICAGO

Who said the Chicago Chapter changed their affiliation to the Library Sciences Group? A little bird flew in to tell me they were alive and well, have had several business meetings since their last reported (March 1969) lecture meeting, and sponsored a Technical Session at the December NEC in Chicago with 2 speakers and 4 panel members. There is a new slate of officers, as well:

Chairman: James H. Beall, Teletype Corp.

Vice-Chairman: Robert Petersen, Kleinschmidt Labs, SCM Corp.

Secy-Treasurer: Marvin Frazier, IITRI

Program Chairman: Howard Wolfman, Teletype Corp.

Then the little bird, gasping with all this news, mumbled something about a reorganization. That's all he'd say on that subject, so we'll have to wait for more until next Newsletter time.

HOUSTON

"Come in, Houston. Houston, this is Newsletter. Do you read me, Houston?" (Even with the pun, no news. Any one know what's happened to Houston? I hear they have ended formal activities. Sorry fellows!)

LOS ANGELES

Good heavens! When the mailman brings news from Los Angeles, he drives a truck up to my door and unloads a few sacks. You must have all read about the tremendously successful Students Night the Chapter held last spring. Feast your eyes on the latest: On May 21, 1969, the Chapter held an EMC Specialists Workshop, with the Theme of "Foundations for the Future." A session was held by each of the nine Specialist Working Groups with a final general summary session. Total attendance was 120!

Planning continues on the 1970 Symposium, in Anaheim. The theme will be "The Expanding Science of EMC." Plans are underway for a student paper contest with cash awards, a trip to the Symposium, and presentation of the winning papers. It should be quite enlightening to hear the student's approach to EMC.

The Chapter's meeting schedule is full as usual.

Date: Sept. 18, 1969

Place: Cockatoo Inn, Hawthorne, Calif.

Speaker: Mr. Fred Nichols, President, LectroMagnetics

Topic: Where Have We Been, Where Are We Going?

Attendance: 27 Members, 26 Guests

Date: Oct. 16, 1969

Place: Tahitian Village, Downey, Calif.

Speaker: Dr. Jack Green, Douglas Advanced Research Labs

Topic: Moon Geology--The Application of Geology to Man's Survival on the Moon

Attendance: Approx. 60

Date: Nov. 20, 1969

Place: Little Joe's Italian Restaurant, Los Angeles, Calif.

Speaker: Roger M. Henkel, General Dynamics, San Diego

Topic: EMI Problems in the Apollo Tracking Ships

Date: Dec. 18, 1969

Place: Not known

Topic: Annual Christmas Social

Date: Jan. 22, 1970

Place: not determined

Speaker: Dr. W. R. Adey, Dept. of Anatomy, UCLA

Topic: EMC in Biomedical Instrumentation (general topic)

The Chapter's average attendance for the 1968-1969 year was 81. That is, eighty-one. Can you imagine? I can think of Chapters that would like to have 81 members on the roster.

Speaking about the roster, here's the roster of officers for this activity year:

Chairman: James C. Senn, LECTROMAGNETICS
Vice-Chairman: Tom Walter, TRW Systems
Secretary: Don Davis, Hughes
Treasurer: Robert Cowdell, Genisco
Program Chairman: Hector Smith
Arrangements Chairman: Joe E. Berger
Publicity Chairman: Larry Schwartz
Membership Chairman: John McDonald
Specialist Working Groups: Hank Knoller
Student Activities Chairman: Tom Walter

And last, but far from least: I will quote directly from the previous Chairman's final report:

Quite an honor was accorded the Chapter when the Los Angeles Council, which consists of 12 Sections and 30 Chapters, selected us to be the recipients of the Chapter of the Year Award. This annual award is based on many factors including membership growth, quality and quantity of meetings, special services to members and budget control. This award reflects the considerable efforts of the elected and appointed officers and the enthusiastic cooperation of the membership and local industry. For which the Newsletter sits back, smiles, and says, "Well Done."

MOHAWK VALLEY

Several issues ago I commented on the quality of the talent in the Mohawk Valley Chapter. Would you believe it's improving? Two of the Chapter members have recently been singled out for special commendation.

Mr. Wayne E. Woodward, an engineer at Rome Air Development Center, has received a second award for his work in the area of interference reduction through the use of active filtering techniques. Mr. Woodward was also named Engineer of the Month recently at RADC.

Another member, Mr. Richard E. Rabe, Past Chairman of the Chapter and group leader of the Interference Control Section of RADC, has received notification of the award of two patents.

The last meeting of the Chapter was just before Thanksgiving.

Date: November 20, 1969

Place: Patty's Stage Coach Inn, Rome, N.Y.

Speaker: Mr. Alfred DiMarzio, Fairchild Electro-Metrics

Topic: Concepts in Computer Control for Frequency Surveillance

Two more meetings are scheduled in late Winter and in mid-Spring. Details on those when they are available.

There are new officers in the Mohawk Valley, too.

Chairman: Mr. George A. Long, RADC

Vice-Chairman: Major Marion T. Ruple, USAF, RADC

Secretary: Mr. Warren L. Keller, GEEIA

And to fill out the record, attendance at the April 28, 1969, meeting was 22.

NEW JERSEY COAST

Ever notice how a Chapter will sponsor a Symposium or some other major event, something that gets the members all keyed up, and when it's all over but the counting there is an excess of energy left over? New Jersey Coast is suffering from that "excess energy" syndrome, and to work it off they are scheduling 6 meetings and a party.

Date: October 14, 1969

Place: Ft. Monmouth Officers' Club

Speaker: Sgt. R. Palma, N.J. State Police

Topic: Communications Problems in Law Enforcement

Attendance: 45

Date: November 18, 1969

Place: Ft. Monmouth Officers' Club

Speaker: Myron Whittlin, Filtron Co.

Topic: Secure Conference Rooms

Date: December 16, 1969

Topic: Christmas Party

The following meetings are scheduled for 1970:

January: Joint Meeting with Metropolitan New York

March 10: Technical Meeting (no topic)

April 15: Joint Meeting with Philadelphia

May 12: Business Meeting, Election of Officers

The new officers for the year are:

Chairman: Warren A. Kesselman, USAECON, Ft. Monmouth

Vice-Chairman: Maxwell A. Brown

Secretary-Treasurer: Charles D. Joly

Program Chairman: Bruce C. Miller, USAECON, Ft. Monmouth

At least they aren't planning any more Symposia this year. With that schedule there would be a case of mass collapse.

NEW ORLEANS

Another long-lost cousin is back in the fold. Such a pleasure to hear from New Orleans. The source from which I write my column told me that the Chapter shares its affiliation with G-EMC and G-AP. That seems like a logical tie-up, and I guess if we must share, the Antennas and Propagation people are close to the EMC fraternity. Let's see what they've been doing.

Date: June 19, 1969

Place: Engineers' Club

Speaker: Dr. Paul Duvoisin, Dept. of EE,
Tulane University

Topic: Radiometeorological Interpretation
of Rake Tropospheric Scatter Data

Attendance: 14

Good grief, what a topic! I wish I understood what it means.

Date: September 30, 1969

Place: Naval Support Activity

Speaker: Daniel M. Oliver, Naval Electronic
Command

Topic: Military EMC Applications

Attendance: 12

A meeting is scheduled for November, but no firm details are available.

This year's officers are:

Chairman: James A. Cronvich, Tulane
University

Vice-Chairman: Charles R. Short, Naval
Support Activity

Sec-Treas: W. E. Aicklen, Chrysler Corp.

Program Sec: Gerardo Diaz-Romeu, FAA

New Orleans says that students are invited to all meetings, but with the phasing out of the Apollo program membership is dwindling as members move to other areas. Well, good luck on your future efforts, fellows, and hang on as best you can.

METROPOLITAN NEW YORK

Following the Jets, the Mets, and Mayor Lindsay, the New York Chapter is about the best thing in New York (at least in EMC). They got a fast jump on the season with a meeting early in September.

Date: September 9, 1969

Place: Brooklyn Poly.

Speaker: Mr. R. Mohr, Airborne Instruments
Lab

Topic: Radiated Interference and Suscepti-
bility Characteristics of Unshielded
Wires

ATTENDANCE: 25

Ever drive under power lines with your AM car radio on? Brother, that's unshielded wires!

The next meeting was scheduled for November 20, and it was a seminar and lecture on "Radiation Hazards--Can Man Live with Electronics?" The panel members were A. R. Kall, G. Wilkonning, and Dr. L. O. Sher. Those of you who know the previous Editor, Rex Daniels, know that he is quite interested in this field. In fact, some of his data is just plain frightening!

The tentative schedule for 1970 looks like this:

January- Joint Meeting with New Jersey Coast
Chapter

February- Field Trip

April- Spectrum Analysis Seminar

May- Shielded Enclosures

June- Field Trip

The field trips are open to and welcome students, by the way.

The Chapter Secretary, Saul Bernstein, presented his paper, "Insertion Loss Measurements in a 5 ohm System," at the Asbury Park Symposium last June. And the September speaker, R. Mohr, presented "Radiation Characteristics of Pigtail Shield Terminations," at the Southeastern EMC Symposium in Atlanta this past October.

New York has four new officers for the year:

Chairman: Robert Brook, AIL

Vice-Chairman/Treas: R. Hassett, RF
Interonics

Secretary: Saul Bernstein, Filtron

Program Chairman: W. Bakker, Metex

Hats off to the new slate, with wishes for a successful year.

PHILADELPHIA

I get just a twinge of nostalgia writing about my old Chapter. Well, no good ever came of idle reminiscence. Look forward to the future, they say, and Philadelphia is doing that with a one-day seminar/workshop next May 19. As the date approaches, further details will be published.

Greater emphasis is being placed lately on magnetic fields and their control. Philadelphia's last meeting follows this trend.

Date: December 10, 1969

Place: Philco-Ford Corporation

Speaker: C. Brennan, EMCO

Topic: Evaluation of Magnetic Shields

And for the record, attendance at the MTC WAS 18.

The 1969-1970 officers in the Philadelphia Chapter are:

Chairman: V. H. Bashaw, General Electric

Vice-Chairman: T. Dietrich, Philco-Ford

Secretary: W. Boral, General Electric

Bob Luck of GE Space Systems and a G-EMC member has been appointed Chairman of the Aerospace and Electronic System Group AdCom Standards Committee. Good luck, Bob Luck.

SEATTLE

Right at deadline Seattle sent in a splendid summary of their activities. And activities it is, too.

First, an omission. I left out the name of Mr. Frank Ball of Boeing on the new roster of officers. He is the new Program Chairman.

Now, to the meetings:

The meeting of May 21, 1969, had an attendance of 18.

The first meeting of the year had a rather exotic topic.

Date: Sept. 18, 1969

Place: City Light Auditorium

Speaker: Dr. Joe E. Nanevycz, Stanford Research

Topic: Recent Developments in the Study of P-Static and Corona Discharge

Meetings are also scheduled for Jan. 21, Feb. 18, Mar. 18, and May 20, with the topic for January as "EMC in Perspective." Dr. H. Schlicke will make the presentation.

A Student Function is still in the talking stage. Nothing definite on that yet.

The Social meeting last July finally came off, and from all reports it was a gas. It was hosted by Gene Knowles and Frank Beauchamp, and about 30 members and their wives attended. Other Chapters: take note!

Chapter members have been busy on the paper-presentation circuit, too. Two were presented at the Communications Conference in Boulder last June, one at Asbury Park, and one at the Southeastern EMC Symposium this past October. I'd like to give credit for the names if they are available. And the titles, too.

Average attendance since April has been 26 per meeting. With a program and interest like this, it's surprising that the attendance isn't much higher.

SAN FRANCISCO

Just a bit of news from the City by the Bay. Attendance at the May 5, 1969, meeting was 13. Hey, fellows, that's not much news.

WASHINGTON, D.C.

The D.C. Chapter has held four meetings since the first of September, with an average attendance of 91 per meeting. Eh? You think I'm what? You're right. I have no news of Washington, other than that same old attendance figure: 26 for the meeting on May 15.

As the Laugh-In TV Program says, "Well, folk...", indicating that folk is the singular of folks. For the benefit of those who didn't see my letter of a few weeks ago, I chided those Chapter Chairmen who don't send me news with the words "hiss and boo." Did it help? Look above, folk.

I get my news from the following sources:

1. Questionnaires I send out before I write the column. I enclose a stamped, self-addressed envelope, too. (C'mon, Chairmen: if you don't send me an answer, at least send me back my stamps!)
2. Copies of the "Group Notes for PROCEEDINGS" notices that the editor sends me.
3. Copies of the standard "Meeting Report" again that the Editor sends me.
4. Copies of correspondence to the Editor, and (very occasionally) direct correspondence to me.

And would you believe the paucity of news from some Chapters with all these sources?

Well, folk, if there's no news about your Chapter, please call your Chairman and inquire what the Chapter (and the Chairman) have been doing. And if you're still not satisfied, slip me a post card and I'll put your name in lights (or at least in ink).

The address is on the cover. And don't be bashful!

Best wishes for the Holiday season!

SMATTERINGS

KDI Acquires RF Interonics

KDI Corp., has acquired RF Interonics, Inc., Bayshore, Long Island, for an undisclosed amount of KDI common stock.

An additional payment may be made based upon RFI earnings over the next four years.

RFI, a privately owned company, designs and manufactures electronic components for radio frequency control. The company's interference filters are used in computer circuitry, power and telephone lines, control and signal leads, audio communication circuits and similar suppression applications.

C. B. Akers, KDI board chairman, said RFI's work will complement Western operations of KDI Navcor, which specializes in active and passive wave filters and modulators.

KDI is a diversified company with interests in electronics, computer, aerospace, environmental sciences, education and physical recreation.

New R-F Ammeter Developed

An article with the above title appeared in the December 1968 issue of the NBS Technical News Bulletin. Three paragraphs of interest are excerpted as follows:

When the National Bureau of Standards Electrodynamometer was developed as an improved standard for high frequency current, it became apparent that a secondary standard was needed to transfer accurate current measurements from the NBS standard to users in industry and science. It was impractical to use other similar dynamometers as a transfer standard because of their large size and cost. Now, however, W. W. Scott of the NBS Institute for Basic Standards has devised a transfer standard which has the required accuracy, ruggedness, and portability.

This ammeter has six major features.

1. Its design is compatible with a 50-ohm coaxial line and introduces no significant disturbance in the line.
2. Its low-reflection r-f connectors provide compatibility with most precision r-f equipment.
3. It has an inherent electrical isolation between the r-f and d-c circuits.
4. Its shielded construction essentially eliminates r-f radiation.
5. It compensates for both ambient and self-heating temperature changes.
6. It is adaptable for use as a watt-meter (in a nonreflection 50-ohm system), having a power range of 12.5 watts to 1.25 kW.

A prototype model covers the current range of 0.5 to 5.0 amperes with corresponding d-c outputs from 1 to 100 millivolts in the unusually broad frequency range of d-c to 1GHz.

Navair Announces EMC Educational Program

The Navy Air Systems Command, EMC Section, under the guidance of Joe Fisher and H. P. Fleming is preparing an EMC Educational Manual which will be the basis for an EMC course. The Nav Air Section has arranged for the cooperation of the SAE AE-4 Committee in offering the course to industry. Currently the EMC Manual, containing 19 Chapters, is undergoing a chapter by chapter review by a review group representing the three services of DOD, Government agencies, and industry. When the review cycle has been completed and the comments have been incorporated in a final draft of the manuscript, a first edition will be printed for use in the first "school". This first "school" will be a joint venture with the AE-4 Committee of SAE, who will handle the announcements, arrange for the facilities and teaching staff. The course will be offered to four groups; (1) managers, (2) planners and design engineers, (3) test and evaluation personnel, and (4) operations and maintenance personnel. The first three of these groups will have representatives from Government and industry. The fourth group will be made up of Navy personnel. The course for managers will be scheduled for 2 to 3 days duration while the course presented to the other groups will be scheduled for about a week's duration. An outline of the Nav Air EMC Educational Course Manual is available and may be requested by writing to:

Commander
Naval Air Systems Command
Department of the Navy
Washington, D. C. 20360
Attn: AIR-53356A

A second part of the Nav Air EMC Educational Program includes eight motion pictures on EMC subjects to be used as training aids for the course. These are being produced by the Western Area Frequency Coordinator, James Lynn, Point Mugu, Calif. In addition to the motion pictures, a series of slide-tape programs is planned. Two of these, which have been produced, are to promote EMC awareness. They run approximately 15 minutes each and are titled, "Electromagnetic Compatibility" and "EMC Organization and Planning".

Back Issues of Newsletter Available

Your editor is running out of storage space and soon will destroy his excess stock of back issues of the G-EMC and PGRFI Newsletters. The Newsletters provide an excellent historical background of the growth of the G-EMC and EMC as a technology since 1958. Assuming that there are sufficient requests, back issues are available from the editor, 608 Gawain Road, Plymouth Meeting, Pa. 19462 at 50 cents each or \$3.00 per set to cover postage and handling costs. Checks should be made payable to Editor, G-EMC Newsletter. This offer expires as of June 30, 1970 or when excess stock is expired.

RADCOM TO MANUFACTURE SHIELDING PRODUCTS

Radcom Corporation opened its headquarters at 246 Columbus Avenue, Roselle, New Jersey 07203, early in January of this year. The new firm has been formed to supply a broad spectrum of products and services to the electronic industry. Full production was scheduled for the first week of February, 1970.

According to Radcom president, Herb Bostram, the firm will provide custom designed shielding products such as knitted wire mesh gaskets, shielded windows, and air circulation and filtration products. It will also make available to customers its testing facilities, test equipment, and a staff for RFI/EMI emission and susceptibility testing work. A shielded room located in the 7,600 square foot plant will be available for customer use.

Mr. Bostram and Art Johnson, executive vice-president, had both been vice-presidents at Metex Corp., Edison, N.J., prior to the founding of Radcom.

SPARK GAP SIMULATES A-BOMB EMP

A one-page article with the above title appeared in the September 1969 issue of Electro-Technology. Several paragraphs were excerpted and included on page 8 of the December 1969 issue of the Newsletter. We have since received a letter from Elliott R. Valkenburg, a member of the research and engineering department of Martin Marietta pointing out a minor omission and an error in the original article that were repeated in the extraction.

First, the omission: the Martin Marietta facility is not the most powerful in the U.S. right now; it is correct to say that the simulator operates at a higher level than facilities of similar design that existed at the time of its construction. Secondly, the error: the system does not charge in 0.1 μ sec. through 20 megohm resistors. It has been operated at a repetitive rate of 10 pulses per second, which corresponds to a charge time of 0.1 second.

(It is interesting to note that Martin has received more than 600 requests for additional information since the publication of this item in Electro-Technology.)

Awards Program

Mr. Jim Hill presented the following report pertaining to the AdCom Awards Committee.

The Committee reports that in addition to the certificate presentation list for the 1969 Symposium that was in the last report, awards were made as follows:

Certificate of Acknowledgement - J. Paul Georgi

Certificate of Acknowledgement - Herman Garlan

Certificate of Acknowledgement - John J. Egli

Certificate of Acknowledgement - John J. O'Neil

Certificate of Appreciation - James S. Hill

The Chapter-of-the Year award will be presented at the 1970 Symposium. The Committee arranged a briefing of chapter representatives at the pre-AdCom meeting. Score reporting is coordinated with G-EMC Newsletter reporting through Ira Berman and Bob Goldblum.

The awards program of the 1970 Symposium is the most ambitious ever attempted at a G-EMC event. A \$250 prize will be awarded to the author of the best U.S. paper and a similar award will be made to a foreign author. In addition, a separate student prize paper competition has been set up outside of the G-EMC IEEE framework which will support scholarship type prizes ranging from \$1250-750-500-250-250 for first to fifth prizes. Transportation and expenses will be paid for the first three and their counselor or faculty advisor. Financing of this program will come from exhibitors and sponsors.

The new By-Laws in section 2.1 provide for an Honorary Life Membership. Candidates are recommended by the Awards Committee and approved by the AdCom. The Awards Committee would like to recommend that members of G-EMC who have reached their 65th birthday and who have held membership continuously since 1959 or for not less than 20 years shall automatically be eligible for Honorary Life Membership.

Explosives and Pyrotechnics

The following two news items appeared in "Explosives and Pyrotechnics", a Newsletter on explosives, pyrotechnics, and their devices, published by the Franklin Institute Research Laboratories in Philadelphia, Pa. (19103):

American Pyrotechnist reports the availability to 'Complete Pyro Course' by Ralph Degn. It is said to cover many aspects of practical pyrotechnology not found in other literature. 120 pages, mimeographed. Dayco, Inc., P. O. Box 9591, Arlington, Va. 22209, \$10.

A new family of initiators have a microcircuit bridge, are at least one-amp, one-watt, no fire, are hermetically sealed and are heat sterilizable to 500° F. Pressure cartridges and gas generators are also available. Data sheets include description, drawing, design data and environmental specs met. Peltec Division of Quantic Ind., Inc., 999 Commercial St., San Carlos, Calif. 94070.

Consolidated EMC Committee

Mr. Fred Nichols discussed the need for unifying the technical recommendation made by the various EMC committees. The IEEE, SAE, EIA, and AIA all have chartered committees on EMC and the recommendations from one do not always agree with another. There were some thoughts towards forming a consolidated committee such as JTAC to make single recommendations to Government agencies, but this would involve conflicts between the various committee charters. For instance, the EIA represents the interests of industry whereas the SAE members participate as individual contributors and industry representation is not allowed. The matter was referred to the AdCom Committee on Advance Planning.

EMC Symposium Sites Selected

G-EMC International Symposium sites through 1976 have been selected by the AdCom as follows:

1970 Anaheim--July 14, 15 & 16
1971 Philadelphia--July 13, 14 & 15
1972 Chicago
1973 San Francisco--July 10-12
1974 New York (N.Y. Hilton -last week of June)
1975 Seattle (tentative)
1976 Washington, D.C. (tentative)

Tutorial Booths

One suggestion for future symposiums made at the December AdCom meeting was to provide tutorial booths. These booths would be on topics such as shielding, filtering, etc., and would be manned by experts in the field. Thus, a person can raise technical questions and receive free consultation. This would not be the same as a workshop which explores the state-of-the-art. This item was tabled for future discussion.

Chomerics "Unwraps" New Facilities in Woburn

Woburn--Ceremonies marking the opening of new plant and office facilities for Chomerics, Inc., Woburn, Massachusetts were held November 6, 1969. More than 125 guests, including state and city officials, stockholders and employees were present as Chomerics' president, Robert F. Jasse, presented a five-hundred dollar check to the Woburn Boys Club. This gift was in lieu of the usual ribbon-cutting ceremonies and was received by Gerald F. Boyle.

The principal speaker, Jeff Tuckto, Vice-President of Research and Engineering for Amphenol, Canada, commented on the future prospects and markets for Chomerics' materials. Tuckto suggested that the question is not which technology of the future will represent a large market for Chomerics' materials, but rather, on which of the many emerging technologies will Chomerics choose to concentrate its marketing efforts.

Woburn Mayor Edward F. Gill, State Senator Ronald MacKensie and guests received tours of the new facilities. The tours were conducted by Chomerics employees.

Three G-EMC Members Receive Fellow Awards

The IEEE has elected 122 members, including three from the G-EMC, to the Grade of Fellow as of January 1, 1970. The ceremony will be held and awards will be presented in March at the IEEE banquet. Our Group (G-EMC) has about 1% of the IEEE total membership, but our representation on the new Fellow list is considerably higher than 1%. The newly elected G-EMC members are:

Schulz, Richard B.
The Boeing Company
Commercial Airplane Division
Renton, Washington 98055

For leadership in the field of electromagnetic compatibility, and for technical contributions to RF shielding.

Shepherd, Neal H.
General Electric Company
Lynchburg, Virginia 24505

For contributions in the field of vehicular communication, particularly in effective spectrum utilization.

Svala, C. Gunnar
North Electric Company
Technical Department
Galion, Ohio 44833

For research in system theory fundamental electronic switching and saturation signaling.

AIR WAVES

and

REGULATIONS

Spectrum Scramble

An article with the above title appeared in the December 5, 1969 issue of the Wall Street Journal. Paragraphs of interest are excerpted as follows:

Airwave Jam Worsens as More Radio Users Demand Frequencies.

In Atlanta, Delta Airlines radio operators are vexed by interference on two of their assigned frequencies. The errant signals are eventually traced to the Maltese air force in the Mediterranean.

A powerful military transmitter is put in operation on the West Coast, inadvertently using the same frequency that operates thousands of radio-controlled garage doors that had been installed by homeowners. "Garage doors went berserk over an area covering seven states every time the transmitter was keyed," says a radio engineering report.

Radio astronomers near Boston see their observations of the sun spoiled by two television stations broadcasting at frequencies just above and below the incoming solar signal.

These examples only begin to suggest the traffic jam on the radio airwaves. It's awful today, and it's getting worse as more and more people decide they need a piece of the radio frequency spectrum to transact business, entertain, save lives, explore space or just fool around. The Federal Communications Commission estimates there are up to 10 million transmitters now authorized to be on the air in the U.S. sending signals as vital as a landing guide at a fogbound airport or as frivolous as a two-way car radio explanation of why a corporate bigshot will be late for dinner.

The Viewers Shoot Back

A toy gun which incorporates an electric buzzer, a battery and an antenna has been patented by John Foster of Canoga Park, Calif. 91304. The toy gun is for use in conjunction with the viewing of a television program. The viewer can aim at the villain on the screen and press the trigger. The radiation will be intercepted by television receiver antennas (including his) so that a noise will be generated at the loudspeaker. This may be interpreted by the viewer as the sound of a gunshot; although it is not precisely so. (How the FCC will interpret it is to be seen.) In any event, the trigger action produces a "gunshot" and the viewer imagines himself to be shooting the villain, the cops, or his favorite politician. The picture tends to "tear" and a distinct visual disturbance attributable to the shooting action of the toy gun is also produced. (This is generally followed by sharp raps at the front door, or by bitter phone calls from the neighbors.) In any event, the viewer can now shoot back! See sketch of patent below:

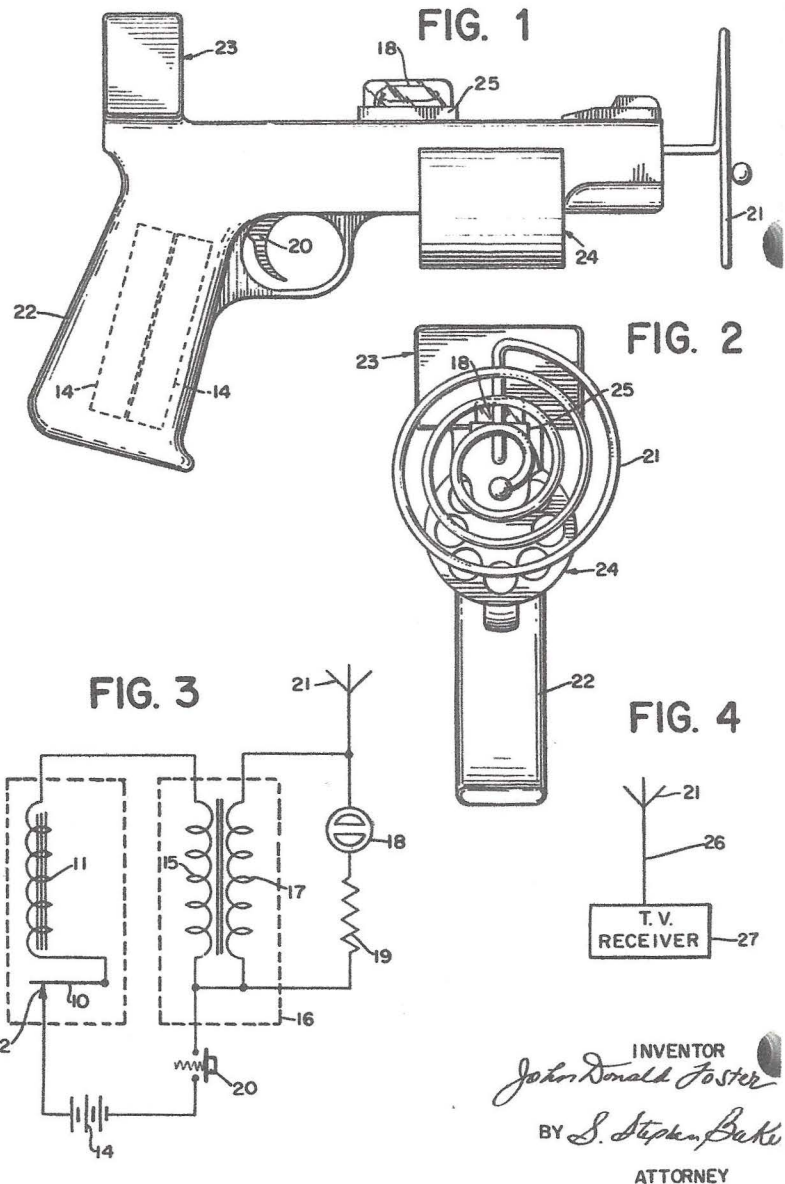
Feb. 11, 1969

J. D. FOSTER

3,426,475

TOY GUN HAVING ELECTROMAGNETIC RADIATION MEANS

Filed Aug. 17, 1966



ECA Proposes Regulations For Reporting on Radiation

An article with the above title appeared in a December issue of Electronic News. Paragraphs of interest are excerpted as follows:

Record-keeping and reporting requirements for manufacturers and distributors of certain electronic products were proposed last week by the Environmental Control Administration.

The proposed requirements would apply to manufacturers of television receivers, television protection devices, shunt regulator tubes, high voltage rectifier tubes, high voltage vacuum switches, all types of X-ray producing devices, microwave ovens, microwave diathermy units, all types of lasers and ultrasonic devices.

Records which manufacturers would be required to maintain for 5 years, starting with the first date on which the product was offered for public sale, would include: Radiation test results and methods, product durability and stability tests, quality control procedures, and product use, maintenance, and testing instructions which have radiation control significance.

The proposed regulations were published in the Federal Register Dec. 16. Comments may be submitted in writing within 30 days thereafter to the Bureau of Radiological Health, 12720 Twinbrook Parkway, Rockville, Md. 20852

New Field Strength Standard Proposed

An article with the above title appeared in the December 1969 issue of Frequency Technology. Paragraphs of interest are excerpted as follows:

R. A. Lawton, of the NBS Institute of Basic Standards at Boulder, has developed an improved method for determining field strength at radio frequencies, by which measurements can be made which are many times more precise than the "standard field" or "standard antenna" methods commonly in use.

The new technique involves measuring the current induced across the equator of a conducting sphere located in the electromagnetic field.

The new device should find prompt application, since present standards of field strength have uncertainties of over 10 percent at frequencies of 30 MHz and beyond. The device is proposed as an operating standard of E-field strength. Another possible use is in the area of radiation hazards, where a means of determining radiation levels near high power equipment and antennas is needed to insure safety to humans. The new standard could also be used to calibrate near-field probes used in mapping the radiation patterns of shipboard antennas, which have been known to accidentally activate radio-sensitive detonators and explosives.

Table of Frequency Allocations Issued

A Table of Frequency Allocations (Section 2.106 of the Commission's Rules) incorporating amendments adopted since January 1, 1969 has been prepared by the FCC and was issued in the Federal Register of Tuesday, December 9, 1969. The changes will also appear in the revised edition (August 1969) of Volume II of the Rules which will be available from the Superintendent of Documents about December 19, 1969. The Federal Register and copies of the Rules are available only through the Government Printing Office and should be ordered directly from there. Price of the new Volume II is \$3.50.

Electromagnetic Radiation Survey Meter

A completely portable detector, the Model 8100 Electromagnetic Radiation Survey Meter has been developed specifically to make microwave oven measurements at close range with good accuracy. It detects and measures hazardous microwave radiation leakage from microwave ovens, heaters, dryers, medical and other equipment. It is calibrated at 915 MHz and at 2450 MHz to cover the two frequencies in most common use.

Three different hand-held probes, each having a dynamic range of 23 db, can be used with the Survey Meter. The design of the probes minimizes the perturbations in the electromagnetic field pattern during test. For instance, at 2450 MHz and a distance of one-quarter of an inch from the isotropic microwave radiator, the field perturbation and phase error is negligible. This feature enables the probe to measure radiation emanating through cracks and joints, and to determine the power density at varying distances from the radiating source.

Each hand-held probe is non-polarized and does not require orientation in the radiation field to obtain an accurate indication of field density. Each probe combines the antenna and detector in a single, composite unit. The probe/antenna diameter at 2450 MHz is only 3/4 inch. Thus, it is non-perturbing at close proximity to the source and will not distort the field.

A panel control allows an audible alarm to be set at any percentage of full scale value of the particular probe. When this threshold is exceeded, an alarm is sounded to alert the operator of the existence of power density greater than his preset level.

All r-f probes and the meter itself are designed for electromagnetic compatibility, making the unit completely insensitive to extraneous electromagnetic radiation under normal battery operating conditions.

For additional information, write to:

Mr. J. P. Schindler, Vice President
Narda Microwave Corporation
Plainview, L.I., N.Y. 11803

PEOPLE in the NEWS

Leonard Thomas, Sr.

Leonard Thomas, Sr. Retires

Leonard Thomas, Secretary of the Group on Electromagnetic Compatibility since 1966, has retired from Government Service. During his 19 years with the Bureau of Ships and the Electromagnetic Compatibility Analysis Center, his activities were many.

In 1945, Mr. Thomas joined the IRE and advanced to Senior member in 1952. He was elected to the AdCom of the G-EMC in 1962 and became chairman of the Standing Committee on Constitution and Bylaws.

Len Thomas was an active member of the American Standards Association Sectional Committee C63 since 1944 and was chairman of the first USA delegation to a meeting of the International Special Committee on Radio Interference (CISPR) of the International Electro-Technical Commission (IEC) in London in November 20, 1946. At this meeting, he was appointed chairman of CISPR subcommittee "A-Limits," holding this position until 1961. Upon establishing the CISPR Steering Committee, he served as a member until 1961. The international liaison work required attendance at CISPR meetings in London, Paris, Stockholm, Milan, Brussels, and the Hague. Based upon his work with the CISPR, he took over the Chairmanship of ASA Subcommittee 3 "International Liaison," a position which he still holds.

He was chairman of the Navy Department Radio Interference Reduction Committee from its formation in 1943 until its replacement in 1946 by the DOD Radio Interference Coordination Committee. He then served twice as a designated coordinator for the Navy.

While with the Bureau of Ships, he initiated development work that resulted in a complete line of RIFI measuring instruments. He acted as Staff Electronics Engineer in the Plans and Programs Directorate while at ECAC, and performed special studies related to the mission of the Center.

Upon retiring, Len Thomas plans to remain active in the EMC field, continuing his activities with the IEEE and the American National Standards Institute. He also plans to offer his services as a consultant on a part-time basis. In his spare time, he plans to travel and spend more time with his three children and two grandchildren. Len Thomas has made many contributions to our society since obtaining his BSEE from Auburn University in 1931, and we wish him many more years of success. His eldest son, Len Thomas, Jr., is also a member of the G-EMC.



H. W. Houck Receives Morris E. Leeds Award

H. W. Houck of Wallpack, N. J. received an award for distinguished achievement at the luncheon session of the National Electronics Conference meeting in Chicago on December 8-10, 1969. The IEEE presented the annual Morris E. Leeds Award for 1969 to Mr. Houck "for outstanding contributions to the field of radio-frequency instrumentation." The Award, consisting of a certificate and a \$500.00 honorarium, was presented by D. M. Hodgkin of Collins Radio in Cedar Rapids, Iowa, a member of the Board of Directors of IEEE.

Mr. Houck was formerly Vice President and Division Manager of Measurements Division, McGraw-Edison Company; a Director of Sag Harbor Industries; President, Measurements Corporation, and President of Armstrong Memorial Research Foundation. He was associated in original development work of the superheterodyne method of reception with the late Major Edwin H. Armstrong. He is a Life Member and Fellow of IEEE, Fellow of the Radio Club of America, member of the Engineers' Club, New York City, and former manager of IRE. In 1941 the Radio Club of America awarded him the coveted Armstrong Medal. In 1955 he was awarded Marconi Memorial Medal of Achievement, VWOA. Presently consulting research and development engineer.

Green Leaves NSL

William C. Green, an active member of the G-EMC has retired as President and Chairman of the Board of National Scientific Laboratories of McLean, Va., after 17 years with that company. Bill served in various committee chairman capacities on the steering committees of the EMC Symposium held in Washington, D. C. He has now opened his own engineering office at 1625 Eye Street, N.W., Washington, D.C. (tel. 202-293-4349) where he offers TEMPEST Consulting Services.

DIVISION NOMINATIONS

In accordance with IEEE Bylaw 201.2, two of the new Group Divisions will nominate and elect Directors in 1970.

Division 3

Broadcasting
Broadcast & TV Receivers
Aerospace & Electronic Systems
Communication Technology
Electromagnetic Compatibility

Division 4

Antennas & Propagation
Electron Devices
Microwave Theory & Techniques
Sonics & Ultrasonics
Parts Materials & Packaging
Magnetics

Not less than two nominations are expected from the Administrative Committee of each Group listed above. In addition, petitions may be submitted by individual members; to be valid, each petition must have the signatures of not less than 100 members of any of the Groups in the Division.

The due date is April 30. Address all nominations and petitions to the Staff Secretary, IEEE Nominations and Appointments Committee, IEEE, 345 East 47th Street, New York, N.Y. 10017.

Each nomination or petition should give name and address, education, and employment summary, and details of IEEE activities. In all cases the member nominated must be of Fellow or Senior Member Grade, as stipulated in Bylaw 301.5.

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THE EXPANDING SCIENCE



of EMC

This is the theme of the forthcoming 1970 IEEE International Symposium on Electro-magnetic Compatibility to be held in Anaheim, California on July 14, 15 & 16, 1970. NOW IS THE TIME TO START MAKING YOUR PLANS TO ATTEND. The Keynote Speaker, who will challenge us to find solutions to our problems will be Mr. Wilfred Dean, Acting Director, Executive Office of the President, Office of Telecommunications Management, Washington, D.C.

The Nation's Consumer Advocate, MR. RALPH NADER will be the speaker at the Awards Luncheon. His discussions will be on EMI and the problems associated with compatibility

It is expected that exhibitors from over 60 different companies will show their wares in the modern new Anaheim Convention Center. It will be the EMC event of the year.

Acknowledgements

The editor would like to thank the following individuals and their employers for their contributions to this issue of the Newsletter:

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