



EDITOR: Nat Pelner

Hughes Aircraft Co., Missile Engineering Labs, Canoga Park, California 91304

Number 80, Fall 1975

1975 MTT AWARDS ANNOUNCED

H. W. Cooper, President of MTT, has announced the MTT awards for 1975. Recipients of these awards are shown below. Full information on the recipients will appear in the Symposium issue next spring.

MICROWAVE CAREER AWARD

Dr. Henry J. Riblet was named 1975 recipient of the MTT Microwave Career Award for "a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques." Dr. Riblet is one of the pioneers of the microwave industry. He is founder and President of Microwave Development Laboratories (MDL), Needham, Mass., and has been active in Microwaves since 1942, when he joined the staff of Radiation Laboratory of MIT. Some of his major contributions include invention of the short slot hybrid coupler in both side-wall and top-wall versions and publication of many papers on Microwave network synthesis.

MICROWAVE PRIZE

Drs. T. E. Rozzi and Wolfgang F. G. Mecklenbrauker received the Microwave Prize for their paper "Wide-band Network Modeling of Interacting Inductive Irises and Steps," published in the MTT Transactions, Vol MTT-23, pp. 235-246, February 1975. The authors are with Philips Research Laboratories, Eindhoven, The Netherlands.

MICROWAVE APPLICATION AWARD

Joseph F. White received the Microwave Application Award "for the development of practical high-power PIN diode phase shifters utilized in various phased array radars." Dr. White is the Technical Director-Microwave Devices Group, Microwave Associates, Inc., Burlington, Mass.

1976 MTT/S NATIONAL LECTURER MICROWAVE SOLID STATE DEVICES

Remarkable progress is being made in improving the performance of microwave solid-state devices used for signal processing and power generation. This progress will be reviewed, with emphasis on practical applications.



FRED STERZER

Fred Sterzer received his Ph.D. degree in Physics from New York University in 1955. He joined RCA in 1954 and is now Director of the Microwave Technology Center of the RCA Laboratories in Princeton, New Jersey. His work has been in the field of microwave spectroscopy, microwave tubes, light modulators and demodulators, and microwave solid state devices.

Dr. Sterzer is the author of over 55 technical papers. He is a member of Phi Beta Kappa, Sigma Xi, the American Physical Society, and is a Fellow of the IEEE. He holds 26 patents in the microwave field.

CORRECTION

Bob Beatty's telephone number is listed incorrectly in the DIRECTORY. We apologize to all who have had difficulty contacting him with regard to his duties as national lecturer. His correct telephone number is:

(303) 443-6188.

Bob's advice is to WRITE—DON'T PHONE. His correct address is:

R. W. Beatty
2110 Fourth Street
Boulder, Colorado 80302



ADCOM HIGHLIGHTS

by Pete Rodrigue

The September 9 ADCOM meeting was highlighted by the selection of recipients of the 1975 Microwave Career Award, the Microwave Applications Award, and the Microwave Prize. New ADCOM members and officers were elected. Substantial discussion was given to financial matters, and routine items of business were handled.

Kiyo Tomiyasu reported for the Awards Committee and obtained unanimous ADCOM approval of the following awards. Dr. Henry J. Riblet was named to receive the Microwave Career Award, and Dr. Joseph F. White will be given the Microwave Applications Award for his work on PIN diode phase shifters. The Microwave Prize will go to T. E. Rozzi and W.F.G. Mecklenbrauker for their paper "Wide-Band Network Modeling of Interacting Inductive Irises and Steps" which appeared in the Feb. 1975 MTT Transactions.

In Al Clavin's absence Kiyo also reported for the Nominations Committee and presented a slate of 21 nominees for the six available ADCOM slots. Many of these nominations were made by local chapters. Jim Degenford (Westinghouse), Harlan Howe (Microwave Associates) and Hal Shrank (Westinghouse) were elected to three year terms. H. G. Oltman, Don Parker, and G. P. Rodrigue were re-elected to three-year terms. H. J. Kuno (Hughes, Torrance) was elected to fill the unexpired two years of Warren Cooper's term. (Past Presidents become ex-officio members for the three years following their term of office.)

ADCOM officers elected for 1976 are Pete Rodrigue, President, and Larry Whicker, Vice-President.

Warren Cooper, ADCOM President, presided over the 9 a.m. to 6:20 p.m. meeting at Cherry Hill, New Jersey, site of the next Microwave Symposium. Howard Ellowitz (speaking for Microwave Journal-Horizon House) proposed that the symposium exhibits be expanded into an exposition like the European Microwave Conference. Mr. Ellowitz gave a brief presentation of his ideas, and considerable discussion followed. The discussion centered around the concept of exhibits management and development by a profession, continuing agency. Among other suggestions were that the symposium managers:

- Assume all organizational and administrative responsibility except for the Technical program.
- Handle non-MTT and non IEEE publicity
- Organize and conduct non-technical sessions
- Share exhibit income with MTT
- Assist in Symposium digest publications
- Provide cash advance to the Symposium Committee.

The basic idea is to promote a smoother, more continuous symposium format and to increase exhibit income. After much discussion a committee was appointed consisting of Ken Button, John Horton, Dick Sparks, Hal Sobol and Larry Whicker. It is being chaired by Pete Rodrigue. This committee is charged with considering alternatives, and working toward a specific proposal to be considered at the Dec. 2 meeting in Washington. *If you have any thoughts on this subject, please contact me or any member of the committee in your area.* Any changes in Symposium organization will not be made binding until after the 1978 (Ottawa) Symposium.

Progress in planning for the '76 Symposium was reviewed by John Horton and an informal tour of the Cherry Hill facility was conducted. Larry Whicker reported for Ken Button, Meetings and Symposium Chairman, on the 1977 and 1978 Symposium plans. Bill Guy is attempting to get an IMPI meeting tied to the MTT San Diego '77 Symposium. Negotiations are in progress aimed at holding another "joint" symposium with AP-S (similar to that held in Atlanta) in 1979 in Seattle and/or possibly in 1980 in Hawaii. Ken Button has been doing an excellent job as Meetings Chairman, but was recovering from a short hospital stay and unable to attend this meeting.

Kiyo Tomiyasu presented the findings of his AdHoc Committee on Overlength Paper Charges, and their recommendations were unanimously accepted. This motion will institute a mandatory charge on all pages in excess of 5 in any Transactions article. Special dispensation powers are given to the Editor. This policy will be implemented as soon as is practical.

Kiyo also reported on a survey of Transactions and Newsletter advertising practices within IEEE. Bob Rivers' motion that MTT proceed with obtaining IEEE authorization to permit advertising in both the Newsletter and Transactions passed without dissent. It was decided to implement Newsletter advertising first in connection with the 1976 Symposium issue.

President Cooper recognized By-Law Committee Chairman Dick Sparks who introduced a constitutional amendment. The amendment makes minor changes in election procedures and was passed unanimously. It is printed elsewhere in this issue.

Hal Sobol gave a very complete report on Technical Committee activity and announced the establishment of two new Technical Committees:

- Digital Microwave Systems — Gene Chow, Chairman
- Microwave Network Theory — Ralph Levy, Chairman

Don Parker, Transactions Editor, reported on statistics of Transactions papers and on a study of review procedures, prompted by Dean Anderson. Dean had suggested that short correspondence papers be published more rapidly by having an IEEE Fellow openly endorse the short paper and foregoing the usual review cycle. Immediate publication in the next issue would follow if the author's institution agreed to the short paper's page charges. This proposal was not accepted because the major delay is not in the review process, but rather in the printing and distribution cycle. Also the dearth of Fellows in some areas was felt to unduly burden authors in some localities.

(Continued on page 4)



CHAPTER ACTIVITIES

by Larry Whicker

NATIONAL LECTURER – 1976

At the September 9 ADCOM meeting Dr. Fred Sterzer was elected as the 1976 National Lecturer. Dr. Sterzer's lecture will be in the area of Microwave Solid State Devices. As indicated in the summer Newsletter, the National Lecturer term will run from June—June (June 1976—June 1977). However, Dr. Sterzer may be able to give one or two lectures to Chapters before the official term starts. In order to schedule the 1976 National Lecturer, please contact him:

Dr. F. Sterzer
RCA Laboratories
David Sarnoff Research Center
Princeton, NJ 08540
Tel: (609) 452-2700, Ext. 2633

1975 NATIONAL LECTURER

Dr. R.W. Beatty has arranged a busy schedule for this fall. A tentative agenda for his lecture on "The Development of Modern Automatic Systems for the Measurement of Network Parameters" is as follows:

Apr. 1, 1975	Washington, DC MTT Baltimore AP/MTT
Apr. 2, 1975	North Jersey
Sep. 15, 1975	Portland, Oregon
Sep. 17, 1975	San Diego, California
Sep. 22, 1975	Milwaukee, Wisconsin
Sep. 23, 1975	Schenectady, New York
Sep. 24, 1975	Boston, Massachusetts
Oct. 16, 1975	Los Angeles, California
Oct. 29, 1975	Long Island, New York
Oct. 30, 1975	Atlanta, Georgia
Oct. 31, 1975	Orlando, Florida
Jan. 20, 1976	Phoenix, Arizona

If you have not yet scheduled Dr. Beatty (and he is not completely exhausted) he may be contacted (Note correction in telephone number):

Dr. R.W. Beatty
2110 – 4th Street
Boulder, Colorado 80302
Telephone: (303) 443-6188

FURTHER COMMENTS ON THE MAY 1975 ADCOM-CHAPTER CHAIRMAN'S MEETING

After my comments in the last Newsletter on the lack of Chapter participation in the May 1975 ADCOM-Chapter Chairman's meeting, I received a single letter from a concerned Past Chairman, Fred Cain, of the Atlanta Chapter. Fred had asked Pete Rodrigue to represent the Atlanta Chapter at the meeting. Since the meeting couldn't take place I was not aware that Pete was representing both ADCOM and his local Chapter. My apologies to you Fred. How about some input from other Chapters?

GENERAL CHAPTER NOTES

- o Four Chapters prepared nomination forms for the MTT ADCOM election complete with twenty-five member endorsements. One of our newly elected ADCOM members was nominated in this way. Keep up the good work.
- o The Phoenix Waves and Devices Chapter (AP-S, G-ED, MTT-S) has done a lot of work and came up with a complete program for the 1975-1976 meeting year. Congratulations to Chairman Dick Kenyon and his co-workers.

Their Program Outline is as follows:

Date	Speaker	Topic
23 Sep 1975	P. D. Kennedy Motorola, GED	A Cylindrical Antenna for Remote Piloted Vehicle Control
21 Oct 1975	S. Okwit LNR Communications	Low Noise Receivers: Their Technology and System Applications
18 Nov 1975	J. Dunkley Motorola, SPD	Integrated Injection Logic (I ² L) Devices
16 Dec 1975	To Be Announced	Antennas
20 Jan 1975	Dr. R.W. Beatty NBS (Retired)	1975 National Lecturer
17 Feb 1976	Dr. I.A. Lesk Motorola, SPD	Solar Cell Devices
16 Mar 1976	Dr. R.S. Elliott U.C.L.A. Consultant to Hughes Aircraft Co.	Antenna Patterns with Arbitrary Sidelobe Topography
13 Apr 1976	Dr. L.R. Whicker NRL	Status of Ferrite Phase Shifters in the United States
4 May 1976	Dr. I. Kaufman A.S.U.	Electronic Displays: Principles and Practices

- o The ED-MTT Chapter of the India Section IEEE held a two-day workshop on "Hybrid Circuits Technology (MIC Techniques)." The Chapter Secretary, G. Gopalakrishna, has reported that there was nationwide participation with 61 attendees at the first day's session and an attendance of 87 on the second day. Congratulations for a job well done.
- o The Washington, D.C. MTT Chapter – in addition to planning technical meetings—has scheduled its annual social event for 27 September 1975. This year's event is an Oktoberfest complete with beer and German band.



EDITORS NOTES

by Nat Pelner

ADCOM is constantly looking for ways of improving and expanding MTT'S services to the Microwave community. If you have ever attended an ADCOM meeting, you would have gone away with a feeling that you are in good hands. It is remarkable that for such a long period of time, and with so many different casts of characters, ADCOM has been able to perpetuate this goal. In fact, it has been and is its primary goal.

In recent times, ADCOM has been plagued with another problem, heretofore, relegated to the back burner--MONEY. Inflation is raising havoc, not only with us individually, but also our professional organizations. Publication costs have skyrocketed to astronomical levels. In coming to grips with this problem, ADCOM has been examining ways of increasing revenue, without increasing dues while maintaining or even increasing the present high level of service to its members.

Toward this end, at the May '75 meeting, ADCOM asked Kiyoo Tomiyasu to examine the possibility of soliciting and selling advertising space in both the TRANSACTIONS and NEWSLETTER. At the September ADCOM meeting, Kiyoo, in his usual thorough manner, presented his plan (see Kiyoo's article in this issue).

If this is successful, this will help reduce the money crunch. Your comments about this, pro or con, are solicited. This is your way of telling ADCOM how you feel about this, or any other matter. Don't ever let us forget that we are here to serve you.

DISPLAY ADVERTISING IN MTT NEWSLETTER



By
K. Tomiyasu
Honorary Life Member, MTT/S AdCom

In constant search for increased service to its Society members, the MTT Administrative Committee recently approved the placement of display advertisement in MTT NEWSLETTER. Society members will have the opportunity to benefit from these advertisements of companies announcing their products and services. This will also provide supplementary income to help defray the ever increasing expenses of MTT publications. Plans are under way to solicit advertisements to be published in the issue just prior to the 1976 MTT Symposium to be held in Cherry Hill, New Jersey in June. We are anticipating success in this venture and hope the results of our decision will serve our members well.

Your support and comments are most welcome.

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John Horton and Ted Saad reviewed the TAB Publications Committee's actions with respect to criteria for evaluating IEEE Transactions. No definitive actions or conclusions were reached at this time.

Bob Knox reported on activities of the Publicity and Public Relations Committee. This committee mails a Microwave News Release to about 15 trade publications as part of our effort to interface between the "Body of Knowledge" and the public.

Larry Whicker reported that Bob Beatty has set up a rather full schedule of National Lectures for this year. ADCOM approved Larry's recommendation of Fred Sterzer as National Lecturer for Fiscal Year 1976.

Bob Rivers, Division IV Director, described IEEE Headquarters activities and agreed to bring ADCOM approved motions dealing with page charges before TAB and OPCOM.

President Cooper adjourned the marathon meeting at 6:18. The next ADCOM meeting will be at the Washington Hilton on Dec. 2.

MEET THE NEW ADCOM MEMBERS



HARLAN HOWE

Mr. Howe received his B.S. in Optics from the University of Rochester in 1957. After graduation, Mr. Howe joined the Sperry Gyroscope Company in Lake Success, New York as an Engineer in the Microwave Antennas and Components Department.

In June of 1962, he joined LEL, Inc. in Copiague, New York as a Project Engineer. In this position he developed a stripline capability at LEL and provided the company with a wide range of catalog components. In 1964 he was promoted to Assistant Chief Engineer and upon the acquisition of LEL by Varian Associates in 1965, he was named Manager of Microwave Engineering.

Mr. Howe joined Microwave Associates, Inc. in September of 1967 as Engineering Manager for Components with responsibility for Transmission Line Devices and waveguide/coaxial lines, and stripline. Upon acquisition of Ferrotec, Inc. by Microwave Associates in April of 1970, he became the Technical Director for the Ferrotec Division. He is currently serving as Technical Consultant for all divisions of Microwave Associates, Inc.

A frequent speaker both here and in Europe, Mr. Howe has authored over twenty papers as well as the book, "Stripline Circuit Design", (Artech House, 1974). He also holds several patents.

He is a senior member of IEEE and SMTT and is a past chairman of the Boston Chapter of SMTT.

James E. Degenford (S'59 — M'64) was born in Bloomington, Illinois, on June 11, 1938. He received the B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Illinois, Urbana, in 1960, 1961, and 1964, respectively.

While a graduate student, he was associated with the Ultramicrowave Group at the University of Illinois, doing research in the fields of millimeter and submillimeter wave transmission systems and detection techniques. In 1964, he was appointed Research Associate in Electrical Engineering at the University of Illinois. In 1965, he joined the Westinghouse Electric Corporation, Baltimore, Maryland, where he is currently employed as a Fellow Engineer in the Microwave Physics Group working in the areas of microwave integrated circuits, low noise mixers, and solid state sources.

Dr. Degenford is past chairman of the Baltimore MTT Chapter and Secretary — Treasurer of the S-MTT Administrative Committee. He is listed in American Men of Science and is a member of Sigma Xi, Tau Beta Pi, Eta Kappa Nu, and Sigma Tau.



JAMES E. DEGENFORD



HELMUT E. SCHRANK

Helmut E. Schrank was born in Berlin, Germany in 1922 and has been a citizen of the United States since 1934. He received the degree in Mechanical Engineering in 1943 and the MSEE in 1950, both from Stevens Institute of Technology, in Hoboken, New Jersey.

From 1943 to 1948 he was associated with Bell Telephone Laboratories, Whippany, New Jersey in various radar design groups. From 1948 to 1954 he was a Research Scientist of the John Hopkins University Radiation Laboratory in Baltimore, Maryland, where he contributed to proximity fuse research. In 1954 he joined the Bendix, Radio Division, Towson, Maryland as a Principal Engineer, supervising a Microwave-Antenna Group. Since 1957 he has been with the Westinghouse Electric Corporation, Baltimore, Maryland where he is presently an Advisory Engineer in the Aerospace and Electronics Systems Division of the Defense and Electronic Systems Center. Mr. Schrank is a senior member of the IEEE, a member of the American Scientific Affiliation, and a member of Tau Beta Pi.

Since coming to Baltimore, Mr. Schrank has been active in association affairs being one of the founders of the IEEE AP/MTT chapter here and its first Chairman. Since then, he has been active in numerous capacities — several times chairman of the nomination committee, arrangements, publicity, program, planning, etc. He was Vice Chairman of the Steering Committee for the 1971 GMTT Symposium, and has served as Secretary of G-AP Region III. He is presently chairman of the S-MTT Waveguide Standards committee, and chairman of Institutional Listings for the S-MTT Transactions. Mr. Schrank has many patent disclosures and has published many microwave articles.

H.J. Kuno (S'61 — M'63 — SM'75) has received the B.S., M.S., and Ph.D. degrees in engineering from the University of California, Los Angeles, in 1961, 1963, and 1966, respectively.

From June 1961 to September 1966, he was with the Electronics Division of the NCR, Hawthorne, California. His work concerned various projects, including the development of solid-state digital and analog circuits, and the development of high-speed thin magnetic film memories. From September 1965 to September 1966 he was a Post Graduate Research Engineer, supported by a NASA Research Grant at the University of California, Los Angeles, investigating microwave and millimeter-wave propagation in solid-state plasmas. From October 1966 to June 1969, he was with the RCA David Sarnoff Research Center, Prince-

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CALL FOR PAPERS

SPECIAL ISSUE ON MILLIMETER-WAVES: CIRCUITS, COMPONENTS, AND SYSTEMS

IEEE Transactions on Microwaves Theory and Techniques

The IEEE Transactions on Microwave Theory and Techniques is planning to publish a Special Issue on Millimeter-Waves: Circuits, Components, and Systems in November 1976. Papers are solicited that describe new and significant aspects of research, development, design, or applications in the following areas of millimeter-wave:

- Power generation and amplification
- Modulation and demodulation
- Frequency conversion and translation
- Power transmission and control
- Signal detection
- Noise measurement and reduction
- Integrated circuits
- Systems and subsystems

Authors are requested to submit manuscripts, in triplicate, before January 31, 1976, to:

Dr. H. J. Kuno, Guest Editor
IEEE-MTT Special Issue on Millimeter-Waves
Hughes Aircraft Company
3100 West Lomita Boulevard
Torrance, California 90509

Both full length papers and short papers are solicited. Since available number of pages is limited, the length for manuscripts should be limited to within 15 double-spaced type-written 8 1/2 x 11 inch pages plus less than 10 figures for full length papers and 3 double-spaced type-written 8 1/2 x 11 inch pages plus less than 3 figures for short papers.

CALL-FOR-PAPERS

FOR SPECIAL ISSUE OF THE IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES ON "LOW NOISE TECHNOLOGY"

Low noise receiver technology advances have been traditionally motivated by radar, terrestrial communication and radio astronomy needs. The current interest in satellite communications has placed added importance on low noise reception at microwave and millimeter wavelengths. This in turn has accelerated the development of new components. The Microwave Theory and Techniques Society would like to highlight these trends in a special issue of the Transactions. This issue will be on Low Noise Technology and will be scheduled for publication in February 1977.

Papers on topics of particular interest (but not restricted to) include:

- Satellite Communication Receivers
- Radar Receivers
- Terrestrial Communications Receivers
- Radio Astronomy Receivers
- Radiometers
- Low-noise Parametric Amplifiers
- Low-noise Mixers
- Low-noise FET and Bi-polar Amplifiers
- Oscillator Noise
- Applicable Millimeter Wave Technology
- New Low Noise Devices and Circuit Techniques
- Cryogenic Techniques for Low Noise Reception
- Low Noise Measurement Techniques
- Manuscripts of papers should be submitted (four copies) to the guest editor, Jesse Taub, on or before June 1, 1976. His address is:

Jesse Taub
 AIL Division of Cutler-Hammer
 Walt Whitman Road
 Melville, N.Y. 11746

Papers will be reviewed in accordance with the normal procedures of the Transactions.

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ton, New Jersey, as a member of the technical staff where he worked on solid-state microwave devices and high-power semiconductor devices. In July 1969, he joined the Hughes Aircraft Company, Torrance, California, as a member of the technical staff where he has been engaged in the development of various solid-state millimeter-wave devices and circuits. He is currently Manager of the Solid-State Circuits Department in charge of development and manufacturing of solid-state millimeter-wave devices, circuits, components and subsystems.

Dr. Kuno is a member of Tau Beta Pi, Sigma Xi, and American Physical Society.

IMPRESSIONS OF THE 5th EUROPEAN MICROWAVE CONFERENCE



by A. Clavin

I was fortunate enough to be able to attend the 5th European Microwave Conference in Hamburg, Germany. I use the word fortunate because I have not spent a great deal of time in Europe, and so this visit was a rather unique and pleasant experience for me. One of the more impressive things for me was the Congress Centrum building in which the conference was held. It represented such a unique facility; I do not believe we have anything comparable to it in the U.S. The main lecture hall was large with comfortable seats and desks in front of each attendee. The acoustics were superb and there was a monitor at each session who adjusted the volume. Attractive young ladies with transmitter microphones went among the audience to amplify questions after each speaker had finished. Since the stage and viewing screens were quite wide, an auxiliary viewgraph machine was used to project the number of the paper being presented in the parallel session. This was quite convenient to the session jumper who wanted to hear a particular paper. In general, the facilities and arrangements were excellent.

I do not intend to comment on the quality or types of papers presented. The individual interested can certainly determine this for himself from reviewing the symposium digest. I would make one comment in general, and that is, the papers seemed to be presented mostly by individuals from universities whereas in the U.S. in similar symposiums most of the speakers come from industrial concerns. The language of the symposium was English. I found that this presented a problem to some of the speakers, to the extent that they had to read the paper rather than present it in a more extemporaneous fashion. In many cases, this spoiled the presentation for me. However, I offer no solution to the problem of the many languages used in Europe.

I was quite impressed with the welcome the city of Hamburg gave to the conference. The symposium attendees were invited to the Rathaus to meet the Senate. This was a very imposing building; the speeches were grandiose and the carpets were red. After the speeches, champagne and fruit juice furnished by the city were offered to the attendees. A very impressive welcome!

I was also impressed with the exhibit area, a very large number of exhibitors were present and the times that I visited the exhibits they seemed well attended. However, it seemed to me that the exhibit hours conflicted with the sessions to a large extent.

As anyone who has been to Europe recently will confirm, prices are high relative to the U.S. If you plan to go next year to Rome, be prepared for high price food and hotel lodgings.

CHAPTER NEWS

1974 - 1975 CHAPTER MEETINGS

DATE	SPEAKER	TOPIC	ATTENDANCE			
ATLANTA						
10/29/74	W.B. Gardner	Optical Fibers for Communication	29		1/14/75	J. Gallagher
11/19/74	L.L. Tsai	A Simplified View of Moment Method	20		3/25/75	M. Skolnik
1/21/75	W.H. Kummer	Antennas for Applications On Spacecraft	28		4/8/75	B. Spielman
3/18/75	T.J. Kelly	The MARISAT Communications System	20			
BALTIMORE				SAN DIEGO		
9/18/74	R.C. Hansen	Antenna Appl. of the Geometric Th. of Diffr.	15	9/10/74	S. Okwit	Recent Advances in Sub-MM Tech'y.
11/13/74	B. Dodson W. Weisenberger	Reliability Testing of Micr. Trans. for Array Radar Appls.	14	10/17/74	C. Donn	Radar
3/12/75	P.S. Hacker	AWAX Surveil. Radar Antenna	19	11/15/74	A. Gowara	Comp.-Aided Anal. & Des. of Coupr., Filts., & T-Lines for MW & MM Wave Appls.
4/1/75	R. Beatty	Automatic Meas'mt. Systems	45	1/13/75	R. Kouyoumsian	Low Noise Receivers
5/7/75	T. Giallorenzi	Fiber & Int'g'd. Optics	-			A L-F Tech. for Solving EM Rad. & Scatt. Probs. - - Method of Moments
BOSTON				SAN FRANCISCO		Microwave & MM Wave Mixers
9/10/74	H.M. Cronson	Time Domain Meas'mts. of Micr. Compts. & Mat'ls.	14	9/19/74	L. Besser	Appl. of Modern Diffr. Th. to Ant. & Scatt. Probs.
10/2/74	H. Howe, Jr.	Microwave Packaging Techniques	39	10/15/74	S. Okwit	CAD & Opt. of Micr. Freq. Multipliers
11/20/74	H. Stinehelfer	How To Specify Gunn Diode for your Appl.	22	11/21/74	P.S. Carter	Low Noise Receivers
CHICAGO				12/7/74	Various	Electron-Bomb'd'd. Semicond. MW Appls.
9/24/74	M. Cohen	Solid State Millimeter Wave Technology	-	1/16/75	A. Gowara	One-Day Course--Intro. to Telecomm. Syst. Des.
11/12/74	C.Q. Lee	A Technique for Analysis of Microwave Diodes	-	3/20/75	C.C. Hsieh	MM Wave MIC Mixers
12/10/74	T.K. Ishii	Microwave Drying	-	4/16/75	A. Gowara	A Feed-Forward S-Band MIC Ampl. Syst.
LOS ANGELES				S.E. MICHIGAN		Varactor Diode Freq. Divider for MW & MM Appls.
10/17/74	S. Okwit	Low Noise Receivers	40	9/19/74	C.H. Walter	Some Recent Advances in Antennas
12/12/74	R.S. Hart	Large "X" Power Using Solid St. Sources	32	10/23/74	K. Tomiyasu	Remote Sensing of the Earth by Microwaves
2/20/75	A.E. Popa	Large BW Opt'l. Modulator	25	11/19/74	D.C. Hogg	Ants. & Prop. in Cm. & MM Wave Comms.
4/17/75	M. Stamm	Non-Invasive.	38	1/22/75	J.A. Rossi	III-V Comp'd. Laser Diodes: Past, Present, Future
ORLANDO				WASHINGTON, DC		Overview of Comp.-Aided Des.
9/16/74	B. McGann	Expl'y. Dev. of X-Band S.S. Hyb. Ckts. for Sat. Comms.	18	10/8/74	D. Calahan	CAD of MW Devices
10/15/74	L. Allen	Inhomogeneous Filter Design	-	11/12/74	R. Lomax	Automated Des. with Opt'ml. Tols.
11/12/74	S. Okwit	Low Noise Receivers	30	12/10/74	J. Bandler	Practicalities of MIC Designs of Systs.
				1/14/75	W. From	CAD of MIC Appls.
				2/11/75	G. O'Reilly	CAD of Filters & Couplers
				3/11/75	B. Spielman	Automated Meas'mt. Systs.
				4/1/75	R. Beatty	Time Dom. Distr'd. Analysis
				5/6/75	H. Stinehelfer	



Celebrate
 THE BICENTENNIAL ANNIVERSARY
 IN HISTORIC MASSACHUSETTS
Attend the 1976
International
IEEE/AP-S Symposium
and USNC/URSI Meeting
 AT THE
 UNIVERSITY OF MASSACHUSETTS
 AT AMHERST
October 10-15, 1976

Write or phone
 Robert E. McIntosh
 Department of Electrical and Computer Engineering
 University of Massachusetts
 Amherst, Massachusetts 01002
 (413) 545-0709

LETTERS TO THE EDITOR

COPYRIGHT LAW, PUBLISHERS RETORT

Editor,

I am writing in regard to your editorial on copyright law revisions which appeared in the Summer, 1975 issue of the IEEE MTT Newsletter.

I am wondering if you have considered the publisher's point of view? Publishers derive much of their income from subscriptions and the selling of re-printed articles. Subscription levels are unfairly low because of the ability to photocopy articles.

A competent engineer assures that he or his library subscribes to appropriate journals. In the event an article from another journal is desired, it is almost always available directly from the publisher. The intent of the copyright law is to limit the uncontrolled distribution of copyrighted material. If the publisher cannot sell his product, he must go out of business. This could be a greater handicap to engineers than to force them to obtain the desired literature through proper channels.

Sincerely yours,
R&B ENTERPRISES

Robert D. Goldblum
Publisher

Editors Comment:

In the editorial we agreed that some revision to the law is necessary so that all areas, author, user, and publisher will be protected. My concern is that the present revision favors the publisher only to the detriment of the user and author.

FOREIGN PUBLICATION INFORMATION

Editor,

The newsletter has been very well done in the past few years. There was a time when most noteworthy publications by number in the microwave field were announced in the newsletter. This practice has gone to zero. It would be great to have this practice revived, since travel dollars are scarce and it becomes necessary to obtain symposium information from conferences held domestically, as well as all European and Japanese Conferences. We need addresses, cost and publication names and numbers.

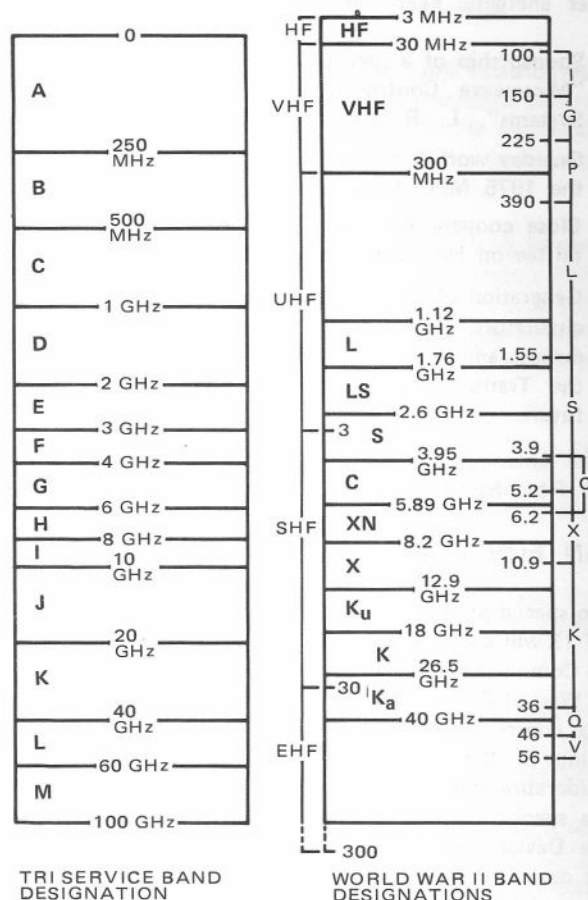
Periodically, even the Russians come up with noteworthy textbooks and publications. Please let's not foster "not invented here" (NIH) philosophy in our field. We contribute a lot to worldwide technical knowledge; we can also benefit from theirs.

Sincerely yours,
Clarence I. Omiya
ROHR Industries, Inc.

Editor's Comment:

We will.

NEW MICROWAVE BAND DESIGNATIONS



The above conversion scale between the old and new band designations is shown as a reference. Why the new band designations were imposed upon us by the military, is hard for me to understand. There seems to be little logic outside of starting the labelling with 'A' and proceeding through the alphabet. The points where bands were separated seems arbitrary; for example, 8-10 GHz is I-band and 10-20 GHz is J-band. Why anyone would want to split the band at 10 GHz is a mystery to me since at that point there appears to be a lot of activity in the radio spectrum, and we must be careful as to whether we advertize that we are operating at I-band or J-band. Of course, it is also obvious that the percentage bandwidth is completely different in these bands with no particular reason for such bandwidth differences. However, I guess the new band designations represent progress, but for me there will always be an X-band.

A. Clavin
Hughes Aircraft Co.

1974-1975 REPORT OF MICROWAVE FERRITE TECHNICAL COMMITTEE MTT-13

MTT-13, under the chairmanship of L. R. Whicker, had another energetic year. Highlights of the year include;

- a) Sponsorship of a special issue of MTT (June, 9174) "Microwave Control Devices for Array Antenna Systems", L. R. Whicker, guest editor.
- b) One-day workshop on "Ferrite Components" held at the 1975 MMT Symposium. See report appended.
- c) Close cooperation with the SMAG Technical Committee on High Frequency Materials
- d) Generation of two (2) major bibliographies, one on circulators, the second on other ferrite microwave devices and materials. Both have been accepted by the Transactions and should appear in the near future.

The chairmanship of the committee was passed to F. J. Rosenbaum at the Symposium.

PLAN FOR COMING YEAR

No special projects are under consideration at this time. MMT-13 will continue to coordinate with the SMAG Technical Committee on High-Frequency Materials, chaired by Russ West of Trans.-Tech. MTT-13 will be responsible for a ferrite control devices session at the 1975 Symposium. A meeting of the committee will be held at that time. Consideration will be given in the coming year to sponsoring a special issue of the Transactions on Edge Guided Mode Devices. A considerable amount of literature on these devices is accumulating, much of it in European and Japanese journals.

List of Present Committee Members;

Fred J. Rosenbaum, Chairman

L. R. Whicker, Past Chairman

C.R. Boyed, Jr.	J.J. Greene	G.P. Rodrigue
W.E. Courtney	R.H.Knerr	R. Tang
L.E. Davis	F. Reggia	L.K. Wilson

Report on One Day "Ferrite Component Workshop" held at the 1975 SMTT International Symposium. The workshop was attended by approximately 41 participants, many from overseas. A copy of the invitation is here enclosed. It was organized by MTT-13 under the direction of L. R. Whicker and F. J. Rosenbaum.

The first session considered Phase Shifters and materials. Prepared remarks were presented by

- I. Bardash, Sedco Systems
- A. Yarrington, Raytheon
- C. R. Boyd, M.A.G.
- G. Harrison, Georgia Tech

Circulators were then discussed by

- J. Helszajn, Herriot-Watt University
- A. Prion, Dermo
- F. J. Rosenbaum, Washington University

After lunch, a spirited exchange on edge guided mode effects occurred. Remarks were given by

- Y. Naito, Tokyo Institute of Technology
- P. de Santis, Selenia
- L. Courtois, CTT (read by F. J. Rosenbaum)
- T. Nagao, Defense Academy, Japan

Spirited inputs were made from the floor including remarks by M. E. Hines, Microwave Associates J. de Koning, and G. P. Rodrigue, Georgia Tech.

Participants seemed to feel that the workshop was effective in focusing attention on current developments in ferrite devices.

Topics for future workshop include ferrite devices for communication systems, noise and intermodulation effects in circulators, and wideband devices for ECM applications.

SHORT COURSES

TITLE:

Numerical Methods of Optimization

DATE:

December 8 - 12, 1975

LOCATION:

University of Manitoba

DESCRIPTION:

Optimization is any process that maximizes a measure of goodness or minimizes a measure of badness; it is any iterative process used in analysis, modelling, design, etc. that attempts to improve an index of performance or error criterion. Many potential users of optimization are deterred by the general unavailability of user-oriented programmes and by the high cost of developing their own packages. This course will provide an opportunity to learn more about the theoretical aspects of modern optimization methods and to acquire skill in some practical aspects of technique.

Theory and Hands-on Experience

The course will include lectures, discussion, and a great deal of hands-on experience with prepared user-oriented packages. It will deal with state-of-the-art techniques, the behaviour of numerical optimization algorithms run on general or special purpose computers, and practical engineering design problems. Participants will learn to distinguish among cost functions, design specifications, and constraints in order to better formulate and benefit from the results of optimization processes.

FEE: \$300

For further information, please write to Professor E. O. Anderson, Extension Division, University of Manitoba, Winnipeg, Manitoba, Canada, R3T 2N2.

TITLE:

Configuration Management of Software Programs

DATES:

December 10 - 12, 1975

LOCATION:

The Biscayne Colleg, Center for Continuing Education,
Miami, Florida

DESCRIPTION:

Designed for those in government and industry who Need a better understanding of the management systems necessary in the development or acquisition of software Computer programs, this course will address the relationship between hardware and software configuration management (CM) and provide an insight on the technical management, and contractual aspects of a computer program contract. It will also identify system planning techniques and procedures for software development as well as documentation requirements and provide instruction for the preparation of software documentation. The course should be particularly useful to CM personnel, data processing managers, software programming managers, and government procurement and project office personnel, program managers, and contract monitors.

FEE: \$320

For further information, please write to the director, Continuing Engineering Education, George Washington University, Washington, D C 20052, or call (202) 676-6106

Noise, Interference, and electromagnetic radiation hazards will also be appropriate topics. The special theme of this conference will be the close and complex interdependence of all electromagnetic measurements with more than a minimal degree of sophistication.

The conference program comprises both contributed and invited papers. Authors wishing to contribute papers should contact Dr. R. A. Kamper, CPEM '76 Technical Program Chairman, National Bureau of Standards, Boulder, Colorado 90302.

CPEM is one of the scientific meetings being hosted by NBS in 1976 in commemoration of the Bureau's 75th anniversary. The National Bureau of Standards is one of the original sponsors of the CPEM, and the conference's first meeting was at the NBS Boulder Laboratories in 1958.

Other sponsors of CPEM are the IEEE Group for instrumentation and Measurement (G-IM), the U. S. National Committee of URSI, and the Union Radio-Scientifique Internationale.

The 1976 CPEM Conference Committee is under the chairmanship of Dr. H. S. Boyne, Chief of the NBS Electromagnetics Division.

Dr. A. F. Dunn, of the National Research council (Canada) is vice chairman, and Dr. R. A. Kamper, also of the NBS Electromagnetics Division, is technical program chairman.

A. Ray Howland, of Hal R. Sanders Associates, Atlanta, Georgia, is editor of the conference proceedings which will appear as a special issue of the IEEE/G-IM Transactions

1976 CONFERENCE ON PRECISION ELECTROMAGNETIC MEASUREMENTS TO BE HELD AT NBS IN BOULDER

The 1976 Conference on Precision Electromagnetic Measurements (CPEM) will be held June 28 through July 1, at the National Bureau of Standards (NBS) Laboratories in Boulder, Colorado, according to Robert A. Soderman of General Radio Company, Chairman fo the CPEM Executive Committee.

CPEM is a biennial forum for the discussion of recent advances in the technique of precise measurement of all electromagnetic quantities, at frequencies from DC through the visible. Topics include measurements of fields and signal characteristics such as power, current, voltage, field strength, and frequency; transfer characteristics of devices and networks such as impedance, attenuation; and the electromagnetic properties of materials.

The emphasis on precision is tempered by the degrees to which various quantities can be defined and controlled, but should generally reflect the best attainable. Papers will cover traditional topics, such as the realization and maintenance of SI units, as well as progress in applying newer technologies, such as digital instrumentation, cryogenic devices, and lasers.

SATELLITE COMMUNICATIONS TO BE COVERED IN PROCEEDINGS ISSUE

Satellite Communications will be the subject of a special issue of the PROCEEDINGS OF THE IEEE scheduled for publication in January 1977. The issue is being organized around invited papers on service possibilities, system concepts, fundamental limitations of orbit/spectrum, and contemporary problems in technology.

Contributed papers on satellite systems and on spacecraft, earth-terminal, communications and device technologies relevant to satellite communications are solicited. Prospective authors are invited to submit a preliminary summary of 500 to 1000 words before 15 December 1975 to the guest editor, Mr. E. Podraczky, Director, Technical and Operations Division, INTELSAT, 490 L'Enfant Plaza, S. W., Washington, D.C. 20024. Final Manuscripts will be due by 15 March 1976.

INSTITUTIONAL LISTINGS

The IEEE Microwave Theory and Techniques Society is grateful for the assistance given by the firms listed below, and invites application for Institutional Listing from other firms interested in the microwave field.

PRD ELECTRONICS, INC.
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An Institutional Listing recognizes contributions to support the publication of the IEEE Transactions on MICROWAVE THEORY AND TECHNIQUES. Minimum rates are \$60.00 for listing in one issue; \$260.00 for six consecutive or alternate issues; \$440.00 for twelve consecutive issues. Larger contributions will be most welcome. No agency fee is granted for soliciting such contributions. Inquiries, or contributions made payable to the IEEE, plus instructions on how you wish your Institutional Listing to appear, should be sent to R. M. Emberson, The Institute of Electrical and Electronics Engineers, 345 East 47 Street, New York, N. Y. 10017.

SPEAKERS TRAVELING OVERSEAS

Reciprocal advantages accrue when competent speakers present papers to IEEE Sections in foreign countries. IEEE members in any country, contemplating a foreign trip (transatlantic, transpacific, transcaribbean, etc.) and desirous and capable of making engineering contacts of this type are invited to inform Miss Emily Sirjane at the IEEE Headquarters office in New York, who will furnish the names and addresses of Section Chairmen with whom the speaker may work out arrangements directly.

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