IEEE SOCIETY ON MICROWAVE THEORY AND TECHNIQUES

NEWSLETTER

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Number 77, Fall 1974

MICROWAVE CAREER AWARD FOR H. A. WHEELER

H.A. Wheeler was unanimously endorsed by the MTT Society's ADCOM to receive the second Microwave Career Award. This action, taken on the recommendation of MTT Awards Committee, chaired by John Horton, recognizes "a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques."

Harold Alden Wheeler is a long-time active member of the IRE-IEEE engineering community on Long Island. He was one of the founders of the Long Island Section, and served as its second chairman just 25 years ago. He resided in Great Neck for 40 years and then moved to Smithtown four years ago.

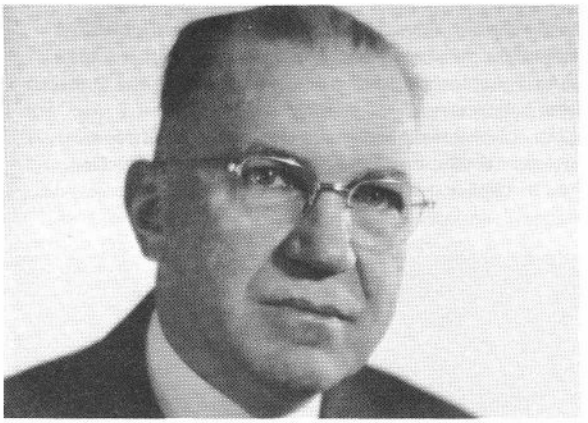
His career is linked with Hazeltine Corporation, a company which has been active on Long Island for many years. The company has just passed its fiftieth anniversary, and Wheeler was employed at the beginning (part time while continuing his college work). He is now serving as Chairman of the Board and as Chief Scientist in the Research Laboratories. In the latter function, he is devoting most of his time to the development of the Microwave Landing System (MLS) of the future.

Mr. Wheeler graduated from George Washington University in 1925 with the degree of B.S. in Physics. In 1972 he received the honorary degree of Doctor of Science.

While in college, he became acquainted with Professor Hazeltine of Stevens Tech, who was then designing the "Neutrodyne" receiver. This design captured the market, and its success led to the formation of Hazeltine Corporation as a patent licensing and engineering organization. Shortly afterward, Wheeler invented and demonstrated the diode AVC which was generally adopted for broadcast receivers and is still used in all AM and TV receivers.

Until World War II, he was active in designing and testing broadcast receivers. From 1930, he was in charge of the company's Bayside Laboratory, and from 1939 was VP and Chief Consulting Engineer at the newly commissioned Little Neck Laboratory. There he was active in FM and in the TV developments for which he was awarded the Morris Liebmann Prize by IRE in 1940.

During World War II, he continued in this capacity in the Navy program of IFF (Interrogation Friend or Foe) which was an accessory to radar. The engineering and leadership by Hazeltine Corporation enabled the wartime production of this equipment. It laid the groundwork for the present generation of Mark XII IFF for radar, as well as DME transponder beacons for air navigation.



H. A. Wheeler

Wheeler is the author of many technical papers presented in IRE-IEEE forums and published in their periodicals. His specialties before the war were related to radio receivers for AM, FM and TV. During and after the war, he specialized in the fields of microwaves and of antennas for a great variety of applications. He has been awarded about 180 U.S. patents and many foreign patents. He is probably best known for his 1939 IRE paper entitled, "The Interpretation of Amplitude and Phase Distortion in Terms of Paired Echos", which was related to TV. He has served as chairman of many committees and was elected a Director of IRE for two terms, 1940-46. He was a Fellow of both IRE and AIEE, and received the Medal of Honor from the successor IEEE in 1964.

After the war, Wheeler formed an independent engineering group, Wheeler Laboratories, Inc., which achieved recognition in the engineering of microwave circuits, tracking-radar antennas, and phased arrays for military and aerospace applications. This company, with laboratories in Great Neck and Smithtown, was acquired by Hazeltine Corporation in 1959 as a subsidiary. In 1971, the WL staff was merged into the Research Laboratories of Hazeltine in Greenlawn, where they are now active in antenna developments for various purposes, especially for the Doppler MLS and other applications in air traffic control.

MICROWAVE PRIZE TO LIECHTI AND TILLMAN OF HP

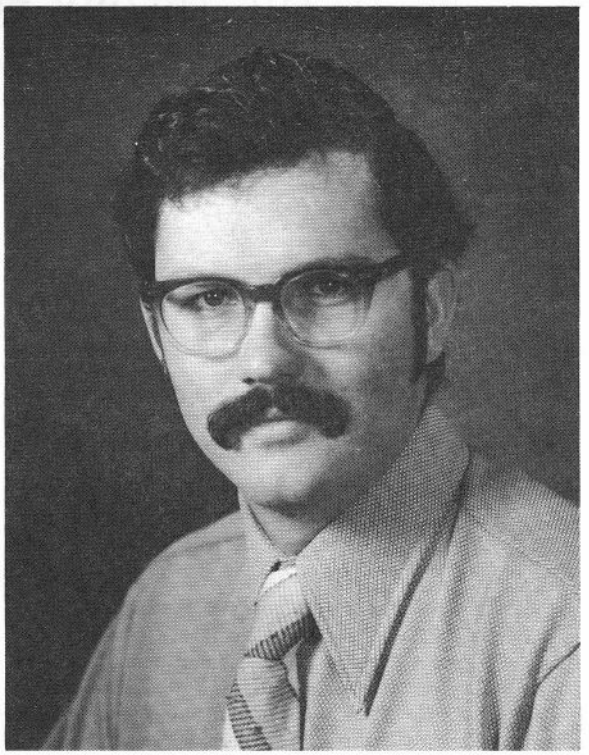
The paper entitled "Design and Performance of Microwave Amplifiers with GaAs Schottky-Gate Field-Effect Transistors" by C.A. Liechti and R.L. Tillman has been named winner of the 1974 Microwave Prize. The awarding of the prize to the authors traditionally takes place at the annual symposium banquet, this year scheduled for Palo Alto.

Charles A. Liechti received the M.S. degree in physics and the Ph.D. degree in electrical engineering from the Swiss Federal Institute of Technology, Zurich, Switzerland, in 1962 and 1967, respectively.

While at the Swiss Institute of Technology, he was engaged in applied research on microwave solid-state circuits with emphasis on varactor-controlled wide-band phase shifters. In 1968 he joined the Hewlett-Packard Company, Palo Alto, California, where he has been concerned with the design and development of IMPATT oscillators and frequency converters with Schottky-barrier diodes. Since 1971 he has been in charge of GaAs field-effect transistor devices, microwave amplifiers, and GaAs digital integrated-circuit developments at the Solid State Laboratory.

Dr. Liechti received outstanding contributed paper awards at the International Solid-State Circuits Conference in 1973 and 1974.

Charles A. Liechti



Robert L. Tillman

Robert L. Tillman was born in El Paso, Texas in 1947. He received the S.B. (E.E.) degree from the Massachusetts Institute of Technology, Cambridge, and the M.S.E.E. degree from Stanford University, Stanford, California, in 1969 and 1971, respectively.

In 1969 he joined Texas Instruments Incorporated, Dallas, where he worked in the development of integrated power amplifiers in the 1-3 GHz frequency range. Since 1971 he has been with Hewlett-Packard Company, Palo Alto, California, and has worked in the areas of wideband amplifiers, YIG-tuned oscillators and the microwave application of GaAs FET's. At present, he is with the Microwave Technology Center, Hewlett-Packard Company, where his interests include fabrication and application of GaAs FET's.

MICROWAVE PRIZE RECIPIENTS

In addition to the Microwave Prize recipients listed on page 8 of the Summer 1974 issue of S/MTT NEWSLETTER the following should have been included:

1955 Herman N. Chait and Nicholas G. Sakiotis
"Properties of Ferrites in Waveguides"
IRE Trans. Microwave Theory Tech., Vol. MTT-1, no. 2, pp. 11-16, Nov. 1953
(Initially called the PGMTT Award)

1956 Robin I. Primich
"A Semi-Infinite Array of Parallel Metallic Plates of Finite Thickness for Microwave Systems"
IRE Trans. Microwave Theory Tech., vol. MTT-4, pp. 156-166, July 1956

Feature publication of the Microwave Prize recipient began with R.I. Primich in the October 1957 issue of IRE Trans. Microwave Theory Tech.

SMTT TRANSACTIONS INITIATES "ACCENT ON APPLICATIONS"

If there is any consistent message that the MTT member, and the IEEE member for that matter, has voiced over the past years, it is to make the transactions more readable to carry more papers on APPLICATIONS. The 1970 survey of MTT members showed a substantial preference for more application papers in the balance of MTT Transactions papers. More recently in an interview, 462 young engineers from nine U.S. Sections raked the various IEEE Transactions over the coals. (See "IEEE report on Societal Needs of Young Engineers", February 1974.) They stated that: the "general level of technical content is too theoretical for the majority of readers"; "Transactions are too deep"; "The Transactions are a bunch of garbage"; "These journals are just a forum for 'publish or perish' articles, and these are worthless to the working engineer"; "IEEE publications are less useful than the Trade press".

The mood and the needs of our members have been made quite clear. The majority wants papers that teach them new technologies in language they can understand and to teach them how to solve their problems at work. They do not want a journal that is primarily an archival publication.

This year, the SMTT has reacted. ADCOM has initiated steps in response to these needs. Starting in 1975, the Transactions will dedicate whole issues to "Accent on Applications". We will dedicate as many issues to applications as can be filled.

WHAT ARE APPLICATIONS PAPERS?

I'm sure your opinion of what constitutes an application may differ slightly from others depending on your educational bent. The list below is what the Task Force considers to be Applications Papers. If you are sufficiently motivated, you are invited to write me and indicate what type papers are important to you. In this list, keep in mind that where appropriate, these papers could also be short correspondence papers, design charts, fabrication, hints, etc. - i.e. what is useful to others and also is worthy of permanent recording and (especially) worthy of indexing so future users can find it.

a. Measurements: Interpretation, limitations, the understanding and use of new microwave instruments.

b. Analysis procedures - mathematical and computer analyses.

c. Design information on a component finding wide application.

d. New solutions to old problems.

e. Processing, Packaging and New Fabrication Techniques: Problems solved by, advantages of, application areas, etc.

f. Tutorial papers on systems where microwaves are important, such as:

1. Commercial Satellite Communications Systems.
2. Automobile Radars.
3. Industrial Uses of Microwaves.
4. Phased Array Systems.
5. Commercial Communication Links (ground based).
6. Navigation Radars.

g. Tutorial and Survey papers on specific microwave technologies.

h. Systems: Systems problems (state problems, design solution, results and conclusion). Design of microwave subsystems where the effects of interconnection of components are explored.

YOU ARE ENCOURAGED TO SUBMIT YOUR APPLICATION PAPER

The SMTT Transactions will never expand its coverage of Applications Papers unless you consider submitting to it your papers, your design charts and analysis procedures, your fabrication hints, etc. The key consideration in your decision as to whether to submit and to what publication to submit to was stated above. If your application paper is useful to others, worthy of permanent recording in an archival publication and should be indexed, then you should submit your paper to the Transactions. You are encouraged to do so.

CURRENT TRANSACTIONS PAPERS NOT REDUCED TO 2ND CLASS CITIZENSHIP

This does not mean that non-applications papers will be rejected or delayed. They will be grouped in issues dedicated to non-applications papers. This point was one of the main concerns of the ADCOM in this transition. Publication of non-applications will be unaffected by our accent on applications. Non-applications papers will be received, reviewed and published as before without change.

What will change is our effort in solicitation of applications papers. We now have a new associate editor of the Transactions whose sole job is to encourage publication of applications papers in the Transactions. The undersigned is this new associate editor. The appointment was made by President Rivers who acted on the recommendation of the ADCOM Task Force on Applications Papers that applications papers be handled by a separate editor. A separate editor was one of that committee's major recommendations because it was realized that special emphasis was required.

COMMENDATIONS – OR DARTS IF YOU HAPPEN TO DISAGREE

There are a number of SMTT people who played substantial roles in this new Transactions emphasis.

It was Bob Rivers who remembered the results of the 1970 GMTT membership survey and initiated this effort this year. He also contributed to its implementation after the Task Force made its recommendations. The Task Force who considered all of the alternatives were Bill From, Dick Sparks, Jessie Taub, Dave Wait and the undersigned who was Chairman. The direction that the Transactions are taking are largely the result of the Task Force's "machinations". The job of implementing the "accent" on Applications was delegated to our present editor, Don Parker and his implementation committee. This committee also included the undersigned, Bob Rivers, Dick Sparks and Dave Wait. Last, but not least, were the important contributions of our past editors, Kiyo Tomiyasu, Fred Rosenbaum, George Haddad and Bob Beatty.

If you like the new plans, please do your part to contribute to its success. If you don't, you may stick pins in our likenesses.

– George Oltman

EDITORS NOTES

by Pete Rodrigue

Beginning with the next edition of the Newsletter (Winter of 1975) Nat Pelner of Hughes, Canoga Park, will take over as editor. This, then, is the last Newsletter for which I serve in that capacity. It is almost trite to repeat it, but the three years I've been responsible for the Newsletter seem in retrospect to have raced by with impressive speed. It's been very educational in the ways and workings of the IEEE. I believe that if enough material crosses the desk, some of it must be assimilated by osmosis.

This period has seen a marked increase in interest in professionalism as well as notable gyrations in the microwave business picture. Three years ago there were mummerings of possible merger of groups, while today expansion into the realm of higher frequency is more a topic of conversation. It has also been a period of noticable change in ADCOM attitudes (eg. Conference exhibits, applications emphasis in the transactions, etc.).

I'd like to express appreciation to those members who have written letters, articles, etc. for these twelve issues. I only wish that more members would write their views to the editor, so that a greater diversity of opinion could be presented. To Al Clavin go particular thanks for his frequent donations of "candid camera" shots for Newsletter use. And to Nat Pelner, Assistant Editor this past year, who has been responsible for getting these issues printed and dispatched to the mercy of the mails, go thanks and best wishes in his editorship.

NEW NEWSLETTER EDITOR

NAT PELNER has been named new editor of the MTT Newsletter. Nat has been in the microwave field for the past 25 years. He joined Hughes Aircraft Company in 1961 and is involved in microwave component and subsystem development. He received a BS degree in Physics and Mathematics from Brooklyn College and a MSEE from California State University, Northridge.

Nat is a past L.A. MTT chapter chairman, former Division I chapter representative (L.A. Council) and has been assistant editor of the MTT NEWSLETTER.

All future correspondence for this Newsletter should go to:

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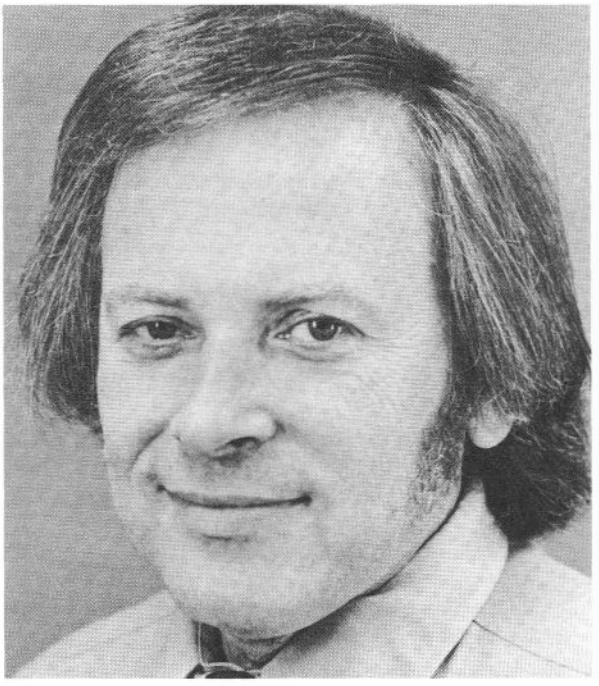
PRESIDENT'S MESSAGE

by R. A. Rivers

The September 10th meeting of MTT-S ADCOM was the last one at which I will preside as President. It was satisfying in that we have achieved a new level of committment to service members' needs in the applications area of publication in our Transactions through our Editor Don Parker and his newly appointed Associate Editor for Applications, George Oltman. We have also started a program of summarization of Microwave knowledge through a Microwave Encyclopedia approach.

We have supported the Sub-Millimeter Symposium and had a successful joint meeting with AP-S in Atlanta thanks to Pete Rodrigue, Ken Button, Gordon Harrison, Jim Gallagher and all the other great people involved in the Atlanta activities. We have contributed to the taking of public positions on the Microwave Radiation problem through COMAR and our own Bill Guy. We have accepted the responsibility of taking public positions in areas relating to our special expertise and are committed to communicating in understandable language.

I want to thank all of those who have participated for their continued interest in the effective operation of the MTT-S.



Nat Pelner

IEEE COMMITTEE ON MAN AND RADIATION (COMAR)

By H.A. Ecker and A.W. Guy

Because of the widespread misunderstanding of biological effects of microwave radiation, the IEEE Technical Activities Board formed a Committee on Man and Radiation (COMAR) in October 1972. Leo Young was instrumental in the formation of COMAR and recruited Mark Grove of the Walter Reed Army Institute of Research to serve as its first chairman.

The stated purpose of COMAR is to collect, examine, and comment on the accuracy of information published on the biological effects of electromagnetic radiation. Such publications can range from detailed technical reports of research activity to news articles concerning controversy on microwave radiation hazards. The output from COMAR consists of reports, press releases, and letters to appropriate agencies that can be readily understood by laymen. Specific examples of activities of COMAR are outlined below.

One of COMAR's first tasks was to develop comments for the Oversight Hearings of Public Law 90-602, by the U.S. Senate Committee on Commerce in the spring of 1973. Also in 1973 a detailed review of the World Health Organization report on the biological effects of nonionizing radiation was conducted at the request of the World Health Organization. COMAR developed a position on, and in response to, the Consumers' Union Microwave Oven article. On January 25, 1974 Mark Grove was asked by John Osepchuk to respond to articles appearing in the Honolulu Star Bulletin, pertaining to a press campaign by Dr. Milton Zaret, incriminating microwave ovens in the production of cataracts in the eyes of humans. His response appeared on February 4, 1974, as a letter to the Editor of the Honolulu Star Bulletin. Later, a statement representing input from the entire COMAR group was given at a press conference on February 28, 1974, which received worldwide coverage.

In March of this year a preliminary outline was prepared for the IEEE Reprint Volume on "Nonionizing Radiation Bioeffects". The Committee is presently assembling recommended papers to support the formal proposal to the IEEE press. COMAR also responded to the proposed OSHA Exposure Standard on Electromagnetic Pulses.

In June 1974, Mark Grove left Walter Reed and joined the Air Force Avionics Laboratory in a position not closely related to biological effects of microwave radiation. Allen Ecker of the Engineering Experiment Station at Georgia Tech has been appointed the new Chairman of COMAR.

One of the 1974 goals of COMAR is to prepare a white paper on nonionizing radiation effects, including recommendations for needed research and/or action. This activity is scheduled to start after completion of the Reprint Volume. Interfaces outside the IEEE have been established through participation of non-IEEE members on COMAR and through peer review practices on the Committee output. This process appears to be both more efficient and more valuable than inclusion of inordinately large numbers of members on the Committee.

There has been lengthy discussion on the recent expiration of the charter of the FDA'S Grant Review Committee on Radiation. Now there would appear to be no commensurate review committee in the entirety of the Public Health Service. The absence of a body of advisors with competence on the biological effects of nonionizing electromagnetic radiation may impose difficult and troublesome problems on the FDA with respect to the administration of its extramural grants program. It is feared that FDA'S problems in turn could result in a slackened or misdirected scientific effort in the area of microwave research. It was suggested that John Guererra, President of the IEEE, contact the Secretary of Health, Education, and Welfare, Mr. Casper Weinberger, for more information about the demise of the Review Committee, and especially about HEW's intentions regarding the establishment in the future of a competent body of advisors. On July 12, 1974, President Guarrera did write such a letter to Mr. Weinberger.

COMAR has responded to a Food and Drug Administration proposal to require two labels on microwave ovens. The first label cautions the user not to operate the oven using microwave energy with objects caught in the oven door or if the door is damaged in such a way that it does not close properly. The second label cautions the user to have the device serviced only by properly qualified service personnel. COMAR objects to the FDA singling out the microwave oven as requiring a permanent warning label when other devices also are known to produce injuries. COMAR maintains that the warning label implies that the microwaves are of a uniquely dangerous nature and that the HEW emission tests and standards are not adequate. There was also some criticism but no objections to the second label.

COMAR's other current interests include the well-publicized incident of alleged microwave produced cataracts on the eyes of a potato farmer living next to the Grumman Aerospace plant in Calverton, New York. It is alleged that microwaves emanating from a Navy radar in the Aerospace plant produced the cataracts. The EPA Regional Office was called, and their measurements indicated that the power level was far below 10 mW/cm^2. COMAR offered its services to the individuals involved with the problem.

Another activity of COMAR involves a controversy over the installation of a microwave relay tower in Mahwah Township, N.J. The Orange and Rockland Utility Company has proposed a 125-150 foot microwave relay tower there, and a group of citizens in the area is opposing the installation on the grounds of microwave radiation hazards. The Township Administrator and the Chairman of the Environmental Commission for the Township were offered the services of COMAR in evaluating the situation. Bill Mumford a member of COMAR, agreed to serve as a consultant to the Township Board of Adjustment. Bill reviewed the pertinent technical information and reported his findings to a hearing of the Township Board of Adjustment on 11 September.

COMAR's guidelines direct that the committee is not to undertake research programs to discover new knowledge, nor is it to set safety standards. Its role, as indicated by the cases outlined above, is to collect existing information, filter it, and present it in an authoritative manner. The committee is concerned mainly with the biological effects of electromagnetic radiation, particularly (but not only) on Man. Its purview includes positive aspects such as medical applications.

ADCOM HIGHLIGHTS

by H.W. Cooper

The annual September ADCOM meeting is election time for new ADCOM members and ADCOM officers. This year 1975 Symposium Chairman Steve Adam, Chapter Activities Chairman Larry Whicker, Vice President Warren Cooper, and Technical Committees Chairman Harold Sobol were all re-elected to ADCOM. New members of ADCOM for three year terms are Ken Button, Technical Program Chairman of the very successful 1974 Sub-Millimeter Symposium, and ADCOM Secretary Harold Stinehelfer and for a two year term, Dean Anderson. ADCOM members elected Warren Cooper President for 1975, and G.P. (Pete) Rodrigue was elected Vice President.

Awards Committee Chairman George Haddad announced the winners of the Microwave Prize, and the Microwave Career Award and indicated that no Microwave Applications Award would be presented this year. Winner of the Microwave Prize for the best paper appearing in the MTT Transaction during the past year was "Design and Performance of Microwave Amplifiers with GaAs Schottky Gate Field Effect Transistors" Vol. MTT-22 No. 5 pp. 510-517, May 1974, by C.A. Liechti and R.L. Tillman. The Microwave Career Award was to Dr. Harold A. Wheeler, known to many of us for his monographs and for the fundamental article on strip line and microstrip properties, published in our Transactions several years ago. Wheeler Laboratories, which he founded and over which he presided until he merged it into Hazeltine Laboratories, was responsible for many notable engineering achievements in the microwave and antenna field over the past three decades.

Chapter Activities Chairman Larry Whicker announced that the National Lecturer for 1975 would be Dr. Robert W. (Bob) Beatty. Bob's talk will be "The Development of Modern Automatic Systems for the Measurement of Network Parameters". Bob, now retired from the Bureau of Standards in Boulder, has contributed notably to precision microwave measurements, and for the past few years, he has evaluated the capabilities and errors of automatic computer-controlled, microwave network measurement equipment.

Larry also received ADCOM approval to film the 1974 National Lecture by Sy Okwit, for distribution to chapters which Sy is unable to address in person. A film of John Allen's 1973 lecture has been shown at a number of places with favorable response.

In his report, President Bob Rivers said that he would not exercise the power to raise dues that ADCOM had given, because of the $15,000 surplus generated by the 1974 Symposium. He also appointed Hal Sobol to provide inputs to Spectrum to highlight the "cutting edge of technology". He indicates that TAB is discussing collection procedures for page charges — apparently IEEE as a whole claims a 90% response on page charges, whereas MTT Editor Don Parker's data show a 50% return on page charges. The significance of the page charges can be appreciated from realizing that in our budget, the page charge income is as great as that from our membership fees. Were it not for page charge income, our membership fees would double! Similarly, upping our page charge return from 50% to 95% or 100% will allow us to retain our membership fees at the same level for a few more years. Thus it is essential that all our members do their best to ensure that their organizations honor page charge requests for published articles. We want to stress, however, that payment or non-payment of page charges does not effect judging an article for publication in our Transactions.

President Bob also reported on the TAB effort to draft guidelines for choosing the divisional slate of officers. The combination of large groups and small groups in divisions opens possibility that the divisional directors could come only from the large groups. As a result, he is soliciting ADCOM comments for possible modifications to the draft guidelines.

There was nothing to report on the QEC and Solid State Circuits Councils but our COMAR (Committee on Microwave and Radiation) representative, Bill Guy, submitted a very complete report of the activities in which they have been involved. This is a key area of interface between MTT and the popular press and Government agencies in the questions raised by Consumers Reports, Ralph Nader, Jack Anderson, and others on the safety of microwave ovens and of radar and communications systems. Bill has just returned from a visit to Russia and the eastern European countries where the emphasis has been on low level, long time, chronic exposures to microwave radiation. The U.S. work, in general, has been on relatively short term, higher exposure levels and as a result, it is difficult to correlate the work in the different areas. One of the 1974 goals of COMAR is to prepare a white paper on non-ionizing radiation effects to include recommendations for needed research and/or action. This activity is scheduled to start in the fall of 1974 after completion of the IEEE reprint volume on "Non-ionizing Radiation Bioeffects".

Technology Forecasting Representative Al Clavin announced that he will organize a Technology Forecasting session at the 1975 Symposium similar to that held at the '74 Symposium. Final details will be worked out at the Program Committee meeting on January 20, 1975.

Standards Co-ordinating Committee Chairman Bob Beatty reported that Hal Schrank was organizing the Sub-Committee on Non-Linear and Active Waveguide Component Terms. George Heiter of Bell Laboratories has agreed to serve on this committee. Bob included Steve Adam's Waveguide Measurements Committee report master plan for their work. In addition the report indicated that Dave Wait is chairing the Sub-Committee on Test Frequencies for the Measurement of Waveguide Components. The draft Standard on Polarization and Modes by George Deschamps should be ready for review by the Standards Co-ordinating Committee before the end of 1974. At Atlanta a meeting was held of the Microwave Magnetics Committee, and goals were defined and IEC co-ordination planned.

By-laws and Procedures Chairman Dick Sparks reported that the Constitution has been re-typed changing Group to Society and that copies were being distributed for review and correction. The next step will be to do the same thing for the by-laws.

ADCOM HIGHLIGHTS (Continued)

Al Clavin commented that only 9 voting members voted for the new ADCOM members and suggested that the President appoint a committee to investigate possible change in our election procedures. President Bob appointed Al Clavin, Dave Wait, Larry Whicker, Dick Sparks, Harold Stinehelfer, Jack Lepoff, and Donald Kelling as members of this committee. The latter three members are Chairmen of the Boston, San Francisco, and Los Angeles Chapters, respectively.

Technical Committee Chairman Hal Sobol reported that the Technical Committee on sub-systems is being constituted in association with the AES Society.

Publicity and Public Relations Committee Chairman Bob Knox submitted a report writing that he is disappointed with the results of the Microwaves News release which has been issued several times in the past 18 months. This release has gone to approximately 13 journals for the microwave field but he has not seen much utilization of the information. He is surveying the editors and will make recommendations at our next meeting.

Ad Hoc Committees on Applications Journal, One-Day Symposiums. and Non-Periodic Publishing had been appointed by President Rivers. George Oltman submitted final reports on the Applications Journal and on the One-Day Symposium. The One-Day Symposium information will be picked up by Larry Whicker and Warren Cooper for implementation. The Applications Journal information is covered later under the Transactions report. Lamar Allen reported that he is proceeding with the attempts to get a National Science Foundation grant for a microwave encyclopedia and is coordinating MTT related non-periodic publications through the IEEE press.

Pete Rodrigue reported that the 1974 International Microwave Symposium was a financial as well as a technical success. He felt that the joint Symposium with AP-URSI, and the Sub-Millimeter Wave Conference worked out well, and that a joint conference with AP in the future should definitely be considered. (This couldn't be done any earlier that 1978 and would be more likely 1979 or 1980). A total of 615 people registered for the Symposium, which was a high for recent years. Of this number, 171 registered jointly with AP or URSI. The Wednesday sessions on the overlap day between AP and MTT were very well attended with about 500 people in technical sessions on Wednesday A.M. Pete Rodrigue, Gordon Harrison, and the Atlanta group were given a vote of appreciation by ADCOM for the outstanding job that they did with the Symposium, particularly in view of the fact that the Chapter has approximately 60 members and was responsible for organizing and co-ordinating the four related conferences.

Ken Button reported likewise that the Sub-Millimeter Wave Conference was a technical and financial success with 171 attendees and approximately $5,000 surplus. He reported also that they have plans for a conference in 1976 for which they would like our support. This conference would be held in Freeport in the Bahamas according to initial plans.

Wes Matthews reported that things were going well for the 1975 Symposium, that the call for papers had been mailed, and that Technical Program Chairman Steve Adam has finalized the selection of the Technical Session Chairman. Social Program Chairman Sally Lepoff is investigating various activities such as tours of local wineries, a lunch or dinner cruise on San Francisco Bay, and a tour of San Francisco. Tours of local industries are also under consideration.

John Horton read Bernie DeMarinis's report that the 1976 Symposium is proceeding well and has confirmed space at the Cherry Hill Motel. They have designated Bert Arams as Exhibits Chairman and expect to do well in the exhibits area.

Transactions Editor Don Parker reported that he and Applications Journal Task Force Chairman George Oltman have worked out the details of implementing the Applications Journal. George will be Associate Editor for Applications papers, and will use the same reviewers and procedures which have been evolved for the Transactions over the years. Don reported that a review of the past Transactions issues shows that about 1/3 of the papers are applications papers, so that we have been pointing toward the applications area. Details of whether the applications papers will be collected in special issues of the Transactions, or whether they will be in a separate section in each month's Transactions will be worked out by Don and George.

George Oltman is turning over the institutional listing task to Hal Schrank. The ADCOM thanked George for his efforts in the institutional listings area.

Treasurer Nat Lipetz was unable to be at the meeting, but the budget for 1975 seems to be in good shape. Current projections show us about $7,000 over a $200,000 budget, but according to Dick Emberson revised figures are coming from the TAB Finance Committee to give us a higher interest rate on the money we have on deposit with IEEE Headquarters. As a result, President Bob Rivers says that he will have a balanced budget and not need an increase in dues.

The next meeting of the ADCOM will be at Palo Alto Tuesday, January 21, 1975. the day after the Technical Program Committee meeting for '75 Symposium.

This is my last ADCOM report as Vice President and I turn over these duties to Pete Rodrigue, our new Vice President. My appreciation to Pete as Editor of the Newsletter for being tolerant with me for my slowness at getting some of my reports in. Pete did an excellent job of tweaking us too.

My thanks to ADCOM for their confidence and as President I will try to live up to the high standards my predecessors have set!

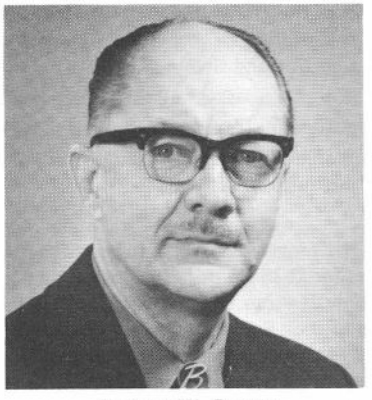
1975 MTT-S NATIONAL LECTURE
THE DEVELOPMENT OF MODERN AUTOMATIC SYSTEMS FOR THE MEASUREMENT OF NETWORK PARAMETERS

The development of modern computer-controlled measurement systems has given the microwave engineer a fantastic tool for the design and testing of components and systems. Going beyond the point of fast, automatic measurements, they now give promise of high accuracy and are revolutionizing the microwave measurement field.

The principles and ideas which led to the development of modern automatic systems for the measurement of network parameters are surveyed. In addition, other ideas for automation of portions of measurement processes are reviewed because some of these principles could possibly be used in future developments. Creative thinkers who were responsible for these ideas will be acknowledged.

The particular developments which improved accuracy will be highlighted and problems in achieving good accuracy will be frankly discussed.

The question of what will happen next in this active field will be cautiously addressed, recognizing that foresight is greatly inferior to hindsight.



Robert W. Beatty

ROBERT W. BEATTY received a BSEE degree from George Washington University in 1939, the SM degree in Electrical Communication from the Massachusetts Institute of Technology in 1943, and the PhD degree in Engineering from the University of Tokyo in 1972. From 1940 to 1942, he was employed at the Naval Research Laboratory, Washington D.C., in work on underwater sound and radio-direction finding. He was a Staff Aide at the M.I.T. Radar School in 1943 and served in the U.S. Naval Reserve from 1943 to 1946. He performed research on Radar Fire Control at the Naval Research Laboratory in 1944 and was stationed at the Radio Material Office, Pearl Harbor Navy Yard in 1945-1946.

He has had several years experience in the field of consulting radio engineering for the radio broadcasting industry. From 1948 to 1974 Dr. Beatty was employed by the National Bureau of Standards, working in the field of microwave standards, and was Chief of the Microwave Circuit Standards at NBS, Boulder, Colorado, from 1955 to 1962. He is co-author with Dr. D.M. Kerns of the book "Basic Theory of Waveguide Junctions and Introductory Microwave Circuit Analysis", and has written numerous monographs and technical papers.

From 1970 to 1972 he was a guest worker at the Electrotechnical Laboratory, Tokyo, Japan. He is past chairman of US Comm I, URSI; has served on the G-MTT Administrative Committee since 1961, was Editor of the IEEE Transactions on MTT from 1963 to 1965, and Chairman of Technical Program Committees for the 1962 and 1973 G-MTT Symposia.

At present, Dr. Beatty is a private consultant in Boulder, Colorado.

CHAPTER ACTIVITIES

by L. R. Whicker

1. Chapter Chairmen's Meeting--An ADCOM-Chapter Chairmen's meeting was held in Atlanta with 32 people present. The breakdown in attendance is as follows: (13) ADCOM members; (16) chapters represented. Generally, the meeting followed the pattern of past Chapter Chairmen's meetings with some new topics covered. These meetings provide a good forum for newly elected Chapter Chairmen to meet ADCOM members and provide a forum for much needed communications between ADCOM and chapters.

2(a) National Lecturer 1974--Sy Okwit has given 4 lectures thus far and has a total of sixteen scheduled.

2(b) National Lecturer 1975--The National Lecturer for 1975 is Dr. Robert W. Beatty. It expected that Bob will do an outstanding job.

3. National Lecturer Movies--The 1973 National Lecturer movie on solid state reliability by Dr. J.L. Allen is available for loan to your chapter, university, or company. To obtain this film, contact:

Dr. B.E. Spielman
Code 5251
Naval Research Laboratory
Washington, D. C. 20375
TEL: AC 202/767-3526

At the September 9 ADCOM meeting funds were approved for filming the 1974 National Lecture by Sy Okwit on low noise receiving techniques. This film will be available for loan in early 1975. If your chapter missed Sy's lecture, this movie (or tape) should prove quite worthwhile.

4. One-Day Symposia--G. Oltman, after a great deal of work, has prepared a guide for organizing a one-day symposium or lecture series. Copies are being forwarded to chapter chairmen.

5. Chapter Meetings--Some of our chapters have been quite busy during the past year. Congratulations on doing a fine job. It is hoped that more chapters will start reporting on meeting activities.

A listing of the meetings held during the 1973-74 season follows:

LISTING ON
1973-74 MTT-S CHAPTER MEETINGS

CHAPTER	DATE	SPEAKER	TOPIC	ATTENDANCE
Atlanta	10/11/73	J.Frazer	Power Absorption & Biological Changes	31
	12/4/73	W.A.Birge	Opt.Systs.for Short Range Comm.	28
	2/12/74	C.T.Rucker W.Cox	Solid State Microwave Generators	32
	3/19/74	W.H.Fleming R.Schlentz	Cardiac Pacemakers	36
	4/26/74	C.H.Walter	Antennas	32
	5/21/74	S.Okwit	Low Noise Receivers*	25
Baltimore	10/10/73			20
	12/1/73	J.Allen	Reliable Micr.Sol.St.Power Sources**	30
	3/6/74	W.Gabriel	Adaptive Arrays	13
	5/8/74	W.C.Brown	Sat.Power Stations & Micr.Pw'r.Trans.	15
Chicago	10/16/73	H.Stinehelfer	Comp.Sci.& Micr.Engineer	-
	11/27/73	J.Allen	Reliable Micr.Sol.St.Power Sources**	-
	1/15/74	C.H.Walter	Antennas	-
	2/19/74	C.L.Cuccia	Microwave Digital Communications	-
	4/16/74	R.M.Knox	Image Line Integ.Circuits	-
Columbus	10/31/73	R.G.Kouyoumjian	Diff.Th., Antennas, Scattering	27
	11/28/73	J.Allen	Reliable Micr.Sol.St.Power Sources**	15
	12/6/73	F.Shipley	Antennas for Mobile Comms.	36
	2/5/74	R.Dixon	Extraterrestial Radio Sigs.	45
	3/28/74	R.Harrington	Gen'l.Comp.Programs for Field Probs.	42
	4/18/74	L.Ricardi	ELF Antennas	28
Denver-Boulder	1/30/74	L.Lewin	Rad.from Curved Opt.Fibers	-
	3/11/74	L.Lewin	Huygen's Obliquity Factor for Flush Mounted Radiators	-
	4/8/74	L.Lewin	Elliptic WG Atten.& Math.Functions	-
L.I./N.Y.	10/24/73	J.Allen	Reliable Micr.Sol.St.Power Sources**	23
	1/30/74	S.Rosenthal	Biol.Effects of Micr.Rad.	32
	4/25/74	B.Pearlman	Automation of Micr.Lab.	24
N.J.Coast	10/23/73	J.Allen	Reliable Micr.Sol.St.Power Sources**	17
	2/6/74	V.Hills	COS/MOS	24
	3/20/74	M.White	CCD's	28
	6/5/74	R.Huber	Artificial Vision for Blind	65
Ottawa	9/25/73	V.Makios	Carlton Univ.Micr.Research	9
	10/9/73	J.Allen	Reliable Micr.Sol.St.Power Sources**	20
	10/16/73	J.Bandler	Optimization Prob.Formulation	17
	1/22/74	Y.Chow	Mixed Basis Functions in Moment Meth.	16
St. Louis	9/25/73	J.Allen	Reliable Micr.Sol.St.Power Sources**	29
	11/13/73	J.M.Roe	Hi Pow.Effects in Micr.Sol.St.IC's	15
	1/23/74	W.Kummer	Antennas for Spacecraft	34
	3/12/74	A.E.Bakanowski	LED's	52
	6/18/74	M.Chang	Integrated Optics	8
S.E.Michigan	9/20/73	L.Ricardi	Sat.Comm.Antenna	-
	11/29/73	J.Allen	Reliable Micr.Sol.St.Power Sources**	-
	1/22/74	F.Arams	Micr.,Mm, Opt.Comm.Systs.	-
	2/20/74	W.Weber	Pb-Salt Lasers	-
	4/24/74	T.Seling	Univ.Mich.Rad.Astron.Observatory	-
Washington	10/9/73	M.Caulton	MIC Technology	33
	11/13/73	L.Young	Microwave Circuits	53
	12/1/73	J.Allen	Reliable Micr.Sol.St.Power Sources**	30
	1/8/74	R.Harrington	Gen'l.Comp.Programs for Field Probs.	50
	2/12/74	F.Sterzer	Micr.Sol.St.Power Sources	25
	3/2/74	T.Bristol	Acoustic Surface Wave Technol.	30
	4/9/74	J.White C.Boyd	Phase Shifters	20
	5/14/74	T.G.Giallorenzi	Fiber & Integ.Optics	33

*National Lecture--1974

**National Lecture--1973

MEET NEW ADCOM MEMBERS

Dean B. Anderson

Dean B. Anderson, Group Leader, Nonlinear and Integrated Optics, Advanced Technology Department, has held various management and staff positions in the Electronics Research Division of Rockwell International, the Science Center and the predecessors North American Rockwell and North American Aviation for the past 20 years. He currently serves as Program Manager for all contractual efforts and Rockwell-funded research programs developing an integrated optics technology for both the near and far infrared regions. A decade ago, he initiated a quasi-microwave approach to optical devices which is now recognized as integrated optics by demonstrating that dielectric waveguide could be employed to phase match optical parametric interactions. As a result, he was elected FELLOW of the Institute of Electrical Engineers for *"contributions to optical waveguide and optical parametric amplification."*

Some early assignments have included Fourier transform optics, microwave parametric amplifiers, and microwave antennas. Prior to moving to California in 1954, he was associated with Hazeltine Electronics Corporation, Little Neck, N.Y. for eight years and served in the Signal Corps as a Radio Propagation Engineer.

Mr. Anderson received his BS in EE degree from Montana State University, Bozeman in 1948. He has served on the Editorial Review Boards of the Proceedings of IEEE for the past decade, for the Transactions on Microwave Theory and Techniques. He served as General Chairman of the 1963 IEEE Microwave Symposium held in Santa Monica, California. He helped organize Long Island and Los Angeles Chapters of MTT serving as chairman in California. Other professional activities have included member of the Technical Program Committee for the 1958 WESCON, the 1973, 1970, 1966 and 1960 MTT Symposia.

Harold E. Stinehelfer

Harold E. Stinehelfer, Sr. is Manager of the Computer Science Department at Microwave Associates. After serving with Army Air Force in World War II he studied at Polytechnic Institute of Brooklyn, N.Y., where he received his B.S. and M.S. degrees in Electrical Engineering in 1948 and 1951, respectively.

Mr. Stinehelfer, joined the Radio Research Staff at Western Union Telegraph Company of New York City in 1948. In 1953 he became Chief Engineer of Frequency Standards, Inc., of Red Bank, N.J. In 1955, he joined Bell Telephone Laboratories staff where he remained until August 30, 1966. While at Bell, Mr. Stinehelfer compiled a "Strip Transmission Line" handbook. In August of 1966, he joined the Semiconductor Division of Microwave Associates, Inc., Burlington, Massachusetts. His specialty is microwave circuit design and analysis.

Harold has extensive publications in the microwave circuit design area and is the holder of several patents. He is a Senior Member of IEEE, a Licensed Professional Engineer and is an Amateur Radio Operator (W2ZRS).

Kenneth J. Button

Kenneth J. Button, presently the Group Leader in Magneto-Optics, National Magnet Laboratory, Massachusetts Institute of Technology, received his M.S. (Physics) at University of Rochester, 1952. From 1952 to 1962 he held the title Solid State Research Physicist, MIT Lincoln Laboratory. During this time he participated in radar system development and consulted on the application of magnetic devices in transmitters and phased-array antennas. With Ben Lax he co-authored the book Microwave Ferrites and Ferrimagnetics, published by McGraw-Hill, 1962. Ken Button was one of the original organizers of the National Magnet Laboratory which opened at MIT in 1962. He has authored over fifty papers on theoretical and experimental topics involving interaction of electromagnetic waves with magnetic, semiconducting and conducting materials, and has given numerous invited papers on solid state research and applications at microwave, submillimeter and optical wavelengths. He recently organized the First International Conference on Submillimeter Waves held in Atlanta, June 1974.

H. WARREN COOPER ADCOM PRESIDENT
G.P. RODRIGUE VICE PRESIDENT

At the September ADCOM meeting H. Warren Cooper, current ADCOM Vice-President, was elected to serve as ADCOM President for 1975. G.P. Rodrigue was elected Vice-President at the same meeting. Both officers will assume their new duties in January.

Warren Cooper is Manager of the Westinghouse Electromagnetic Technology Laboratory in Baltimore and has served on ADCOM for several years. He was named Fellow of IEEE in 1970, is past Chairman of the Washington Chapter and of the 1971 International Symposium held in Washington. He was educated at New Mexico A&M College and at Stanford University from which he received B.S. and M.S. degrees, respectively, in Electrical Engineering.

G.P. Rodrigue is Professor of Electrical Engineering at Georgia Institute of Technology and is currently MTT Newsletter Editor. He was a founder of the Atlanta MTT-AP Chapter, its first Chapter Chairman, and the Chairman of the 1974 MTT Symposium Steering Committee. Before joining the Georgia Tech faculty in 1968, he was with the Sperry Microwave Electronics Co. for approximately ten years. He received his B.S. degree in Physics from Louisiana State University and his Ph.D. in Applied Physics from Havard University.

CALLS FOR PAPERS

1975 INTERNATIONAL MICROWAVE SYMPOSIUM 1975 IEEE MTT-S May 12-14, 1975 Palo Alto, California, U.S.A.

The 1975 IEEE MTT-S International Microwave Symposium will be held at Rickey's Hyatt House in Palo Alto, California. The symposium theme is *Microwaves In Service To Man,* to emphasize the many ways microwaves are coming to play an ever-increasing role in everyday living.

Papers are solicited dealing with original work, both theoretical and applications-oriented, in the field of microwaves. Material submitted should not have been previously presented or published. Any papers concerned with microwave theory, techniques, devices, systems, and applications will be considered.

Authors are requested to submit both a 35-word abstract and a 500-1000 word summary (up to 6 illustrations), clearly explaining their contribution, its originality, and its relative importance. Abstracts and summaries must be received on or before 2 January 1975 by Dr. Stephen F. Adam, chairman, TPC 1975 MTT-S Symposium, Hewlett-Packard Company, 1501 Page Mill Road, Palo Alto, California 94304 U.S.A. Notices of acceptance or rejection will be mailed to authors by 3 February 1975. At that time, authors of accepted papers will receive forms and instructions for preparing material to be printed in the Symposium Digest.

SYMPOSIUM NEWS

During the Symposium, a special Japanese session will be presented, with the cooperation of the Tokyo MTT Chapter. Professor Shigebumi Saito of the Institute of Industrial Science at the University of Tokyo agreed to organize this session, dealing with *Millimeter Wave Communication in Japan.*

SYMPOSIUM EXHIBITS

The 1975 IEEE MTT-S Symposium will include exhibits to be located at the entrance of the technical session meeting rooms. Inquiries concerning exhibits should be directed to Jay Stone, Jay Stone Associates, 339 South San Antonio Road, Los Altos, California 94022 U.S.A.

IEEE INTERNATIONAL RADAR CONFERENCE

Papers are being solicited on all aspects of radar systems and technology for presentations at the IEEE International Radar Conference to be held at Stouffer's National Center Inn in Arlington, Virginia, on April 21-23, 1975.

Papers should be submitted by 15 November 1974 for review by the Papers Committee. Accepted papers should be in final form, typed on special mats (to be provided) and in the hands of the committee by 1 February 1975 in order to appear in the published conference record. Published papers must not exceed 3000 words and may contain up to six illustrations.

Authors should submit three copies of the complete paper to:

Dr. Merrill I. Skolnik
Chairman, Papers Committee
Code 5305
Naval Research Laboratory
Washington, D.C. 20375

SHORT COURSE

RADAR SYSTEMS AND TECHNOLOGY January 6-10, 1975 George Washington University, Washington, D.C.

This course is designed for engineers, scientists, managers, and others working in the field of radar, radar systems, and related fields who need a better understanding of the concepts and applications of modern radar and radar systems. The presentations will emphasize the technological as well as the systems applications of modern radar. The course will cover radar performance and capabilities, detection of targets in clutter, MTI-radar, signal and data processing phased array radar, solid state radar, system design, radar in air traffic control, synthetic aperture, and over-the-horizon radar. $395.

For further information, write to the Director, Continuing Engineering Education, The George Washington University, Washington, D.C. 20006, or call (202) 676-6106.

INTERMAG CONFERENCE

The 13th International Conference on Magnetics (Intermag) will be held on April 14,15,16,17, 1975 in London at Imperial College, under the joint sponsorship of the Magnetics Society of the IEEE, the Institute of Physics and the Institution of Electrical Engineers.

Contributed papers are solicited in all areas of applied magnetics and related magnetic phenomena.

In addition to the contributed papers, there will as usual be invited papers, sessions in which competing technologies can be assessed, tutorial sessions and workshops for informal discussion of topics having immediate interest.

Contributions must be in the form of two-page digests in English and should be sent to:

E.C. Snelling,
Mullard Research Laboratories
Redhill, Surrey, RH1 5HA,
England
to arrive not later than 20 November 1974.

The digest should clearly outline the work to be reported and it should include as many of the results as possible. The inclusion of figures, tables, and especially numerical results is encouraged. Contributions will be selected by the Program Committee on the basis of technical content and subject timeliness.

SHORT COURSE

ELECTROMAGNETIC WAVE PROPAGATION FOR COMMUNICATION SYSTEMS DESIGN February 10-14, 1975 George Washington University, Washington, D.C.

Designed for managers, scientists, and engineers who need a better understanding of the propagation phenomenon affecting the design and performance of communication systems. It will cover the propagation factors governing the performance of space and terrestrial systems, including VLF, LF, HF, and microwaves. These factors will then be employed for characterizing, modeling, and predicting the performance of digital communication systems. $395.

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

HOW TO RUN A TECHNICAL MEETING - - *EUROPEAN STYLE*

by Raj Mittra

Ever since its inception in 1969 in London, the European Microwave Conference has grown steadily into one of the largest symposia in the world in the area of microwaves, antennas and propagations, communication, etc. One may regard it as a sort of combined S-MTT and AP-S symposium, and beginning this year, it has been coupled with a large trade show with more than 100 exhibitors from Europe and US participating. I have been privileged to attend all of the EMC meetings beginning with the one in London. Since then it has been held in Stockholm, Brussels, and this year it took place in Montreux, Switzerland, on the shores of Lake Geneva. What impressed me most about this meeting, as well as those that preceded it, was the high degree of professionalism with which they were organized. Let me mention a few items to illustrate my point. The visual-aid system, which of course is the heart of any successful technical meeting, was top-notch, entirely automated, and professionally managed. In the Brussels meeting the authors were required to turn in their slides well in advance to an office where a staff of several girls would busily load them in the proper sequence, and check and recheck them to assure that there would be no slip-ups during the actual presentation. At Montreux the authors were asked to load and check their slides themselves. In either event, this little preprocessing step allowed the meeting to run very smoothly and without the occurrence of the typical scene during a presentation in which a slide will show upside down and the projectionist will start fumbling with it, hoping nervously to get it right the first time, which obviously is in violation of Murphy's law. The projectors were all autofocus type and were controlled directly by the speakers. The meetings were started very punctually by the chairmen and large Swiss made (what else?) digital clocks were on prominent display in the front of the room to help them time the speakers. Three-color lighting boxes served as warning indicators for the speakers and one could not help be be impressed by the sense of punctuality which pervaded the entire atmosphere of the meeting. Of course, the availability of ample help in the form of assistance, who jumped to their feet as soon as the speaker started to make his approach toward the platform and helped him with the lapel mike and other visual aids systems, had a lot to do with the ability of the speakers to be on time. Also one had a sneaking suspicion that these eager-beaver assistants were standing ready to carry the speaker off of the podium just in case he overran his allotted time; however, fortunately, such an occasion never arose.

There were a relatively large number of invited papers which presented "State-of-the-Art Reviews" on various topics and these were always given in combined sessions in a large lecture hall which could comfortably (and believe me those chairs were comfortable) accommodate 1500 people. The contributed papers were presented in two parallel sessions. Two closed-circuit TV's in the front of the room always indicated the paper being presented in each of the simultaneous sessions. This made it very convenient to switch sessions if one desired to do so. The TV screens also served as message-centers for the audience.

In order to assure that the questions from the floor were clearly audible to the entire audience, portable FM transmitting microphones were available for anyone intending to ask one. Two girls, who looked as though they were on leave from the Swiss track team, ran to get the microphone to anyone with a raised hand in record time as soon as the hand went up. With that type of service it was almost fun to ask questions.

Refreshment stands were conveniently located outside thelecture hall. Soft drinks, including coke, hot drinks and beer were available in exchange of color-coded coupons which came with the registration material. You can guess that given the choice between coke and beer for the same price one did not have to have his arms twisted too much to ignore the Department of Commerce 'Buy American' policy, U.S. balance of trade problems notwithstanding.

One might wonder what was the price of all these conveniences and innovative arrangements provided by the EMC organizers? Well, it wasn't cheap that's for sure. Registration fee was close to $70 in Montreux and $90 in Brussels, although the latter included lunch. Don't forget though that service is expensive in the advanced European countries because the people providing these services get paid handsomely there. Also, Europeans believe in running a quality show and take the attitude that if the cost are high, well so be it! Don't think for a minute though that the attendance of these meetings suffers because of high costs. Far from it. The attendance of the Montreux meeting was in fact more than twice the size of a typical AP-S meeting. See if you can figure that one out! Also, the rejection ratio of papers is extremely high in the European Microwave Conference. In fact, in Montreaux two out of three papers sumitted were rejected. In contrast, in AP the similar figure is 10 to 20 percent of submission.

Finally, one might question the wisdom of shelling out $800 to $900 to attend a meeting in Europe. Personally, I think it is very worthwhile to visit Europe periodically and find out what is going on in that part of the world. Also, it gives me a change to renew acquaintenances with my European colleagues who are extremely genial hosts. Besides, once in a while (the frequency is classified) I like joining the ladies program when the meeting seems to get a little dull, and go on those fabulous tours they offer, like the one that took us by cable cars almost to the top of the highest peak in the Alps. You can imagine what a beautiful place that is for germinating blue-sky ideas. And you wouldn't want a price tag on that, now would you?