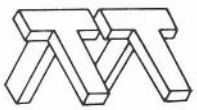
IEEE SOCIETY ON MICROWAVE THEORY AND TECHNIQUES

NEWSLETTER



EDITOR: G. P. Rodrigue
School of Electrical Engineering, Georgia Tech, Atlanta, Georgia 30332

Number 74, Winter 1974

PLANS FOR '74 SYMPOSIUM SET

The '74 Microwave Symposium Program Committee, chaired by Gordon Harrison, met on January 29 to organize the technical program for the June 12–14 meeting. The large number of papers submitted necessitated parallel sessions for each of the three days. Technical topics include:

Phased Arrays (joint with AP–S)

Technology Forecasting and Assessment (joint with AP–S)

Microwave Theory

Biological Effects and Medical Applications

Millimeter Wave Astronomy

Millimeter Wave Integrated Circuits & Components

Gallium Arsenide Devices

Planar Microwave Devices

Microwave Acoustic Devices and Applications

Parametric Amplifiers and Upconverters

Automated Measurement and Computer Optimization

Ferrite Devices

Microwave Packaging

Active Microwave Devices

Microwave Applications in Communications and Industrial Systems

In addition to the conventional technical sessions, several panel discussions are planned for Wednesday evening, June 12.

John Guarrera, IEEE President, will deliver the keynote address at the opening session. This will be followed by the joint S–MTT and AP–S sessions. Dr. C. L. Hogan, President of Fairchild Camera and Instrument Co., will be featured speaker at the Banquet on Thursday. Les Hogan is familiar to all in the microwave ferrite area for his pioneering work in the 1950's, before he turned his talents to the semiconductor and integrated circuits field. Preceding the Banquet will be a Scientific Atlanta Sponsored Cocktail Party. An active Ladies' Program is planned throughout the conference.

The advance program for the conference will be in the mail shortly with complete details on the technical program, transportation, hotels, registration and fees. Because of the anticipated attendance at the June Symposium hotel reservation forms should be returned promptly.

RIVERS BRAINSTORMS '74 ADCOM

by Warren Cooper

The first 1974 meeting of your MTT Society Administrative Committee was held in Atlanta on Sunday and Monday, January 27 and 28. President Bob Rivers had laid out a stiff agenda for the ADCOM - - on Sunday there was an all day meeting discussing where the MTT Society is and where it is going. The general conclusion of this meeting was that our prime contributions lay in the area of writings and presentations, that is, in our Transactions and in our annual symposia. It was concluded that we presently had probably one-half of the microwave professionals (5,000 members out of a guestimated 10,000 total of microwave engineers). Our objective is to improve service to our present Society members and in the publications area through the possible publication of some other journal such as "Microwave Applications Journal", less theoretically oriented and with less emphasis on original contribution than our Transactions. This journal could provide more in the way of useful applications data and fit into the niche between the microwave give-away type publication and our Transactions. President Bob Rivers has appointed a Task Force to study this problem and to come up with a report at our March ADCOM Meeting in New York. Chairman of the Task Force is George Oltman and the members are Bill From, Jesse Taub, Dave Wait and Larry Whicker.

A second Task Force was established to look into the possibility of providing more service to the membership through the publication of reprints and other books through IEEE Press. Chairman of this Task Force is Fred Rosenbaum and he is assisted by Lamar Allen.

Our current major technical areas are: (1) waveguides and their circuits, (2) solid state devices, (3) ferrites, (4) ultrasonic devices, (5) passive components in various transmission media, including stripline, slot line, microstrip, and other integrated circuit type transmission lines as well as those appropriate to the millimeter wave area. We also have interest in (6) quantum-electronic devices and in opto-electronic devices and subsystems. The interest in these areas is caused by the necessity for the next area (7) high data rate microwave systems and devices. (8) Microwave systems in general, (9) microwave, millimeter wave, and sub-millimeter or optical measurements, (10) computer aided microwave circuit design, testing, and manufacturing. This might be lumped under the general heading of microwave software. Other microwave software might include drawings, specifications, and standards in the microwave field. (11) The area of biological interactions with

(continued on page 2, column 1)

EDITORS NOTES

by Pete Rodrigue

A word about the publication times for your S–MTT Newsletter . . . You may have noticed that in 1972 we changed the dating of newsletters from "March", "June", "September", and "December" to "Spring", "Summer", "Fall", and "Winter". This was done for several reasons. One is, of course, the relatively long time delay in the mails. At present delivery times run about 4 to 6 weeks. When the printing and assembly times are added to this, it is clear that your Newsletter containing September "news" will not reach you until November at best. Another reason is that these issues attempt to relate the discussions and decisions of ADCOM to the membership. ADCOM has for several years moved the "December" meeting to coincide with the Program Committee meeting dates for our annual symposium - - and that's at the end of January! It takes about a month to collect and assemble all inputs and so there's no hope of that "December" issue getting into the mail before the end of February, and I thought it best to "honest-up" and simply call it Winter. As I write this buds are bursting into bloom, so I'm afraid that I even missed "Winter"!

The next issue follows the March ADCOM meeting and hopefully carries news of the forthcoming Symposium. It's scheduled to follow this issue in much less than the apparent 3 months. Well, now you know, even if you never cared and weren't afraid to ask.

(Rivers Brainstorms continued)

microwaves is one which our Society has been giving increasing attention to in both the 1973 Symposium and we have 10 papers submitted for the 1974 Symposium.

President Rivers has asked me as Vice President to undertake to lead the short range planning for the Society, so please send me any suggestions or comments to the address below:

H. Warren Cooper
Westinghouse Electric Corporation
Advanced Technology Laboratories
P.O. Box 1521, Mail Stop 3608
Baltimore, Maryland 21203

PRESIDENT'S MESSAGE

by R. A. Rivers

The president of a Society such as ours has a unique opportunity for leadership. He can ask the Adcom to consider new goals and programs. He can also expect more consideration of these new goals and programs than he can as just another Adcom member. At our first no-agenda meeting in Atlanta on January 27th, we, as a committee, concluded that we should investigate expansion of our coverage of our Body of Knowledge to include application information and books. These are expansions of our primary activity involving presentations and writings.

There are other goals and programs that can be considered bearing on other than technical information. Some of these other goals are related to Money, Jobs, Degrees, Visible Contributions, Professional Association and Social Relations. It is hoped that at another no-agenda meeting on Sunday, March 24th, prior to the March 25th regular Agenda Meeting, we will be able to explore possibilities of activities in these other areas.

There are, of course, always restrictions on what can be done because of limited resources. There should be no consideration of diverting resources from our present desirable and useful activities, but we have the responsibility of thoroughly considering the entire gamut of our members needs, find the resources, and do what is possible.

As in many business situations, volume is a key to success. Our MTT Society is no different. Increased membership would make it possible for us to undertake new programs. These new programs would in turn satisfy more of the needs. I estimate that only half of those active in the Microwave Field and eligible for membership are presently members of the Microwave Society. You could help to support expanded useful services if you would get just one non-member associate of yours to join the IEEE and/or the MTT–S. If each of you obtained just one new member, it would be a tremendously meaningful vote of confidence in expanded programs. See Page 3 for a short form application.

INSTRUCTIONS TO APPLICANTS

1. Fill out both sides of the application and mail with payment to the IEEE address shown on the application.
2. If you wish to enroll in one or more of the IEEE Groups and Societies, indicate the code for each Group and Society you select in the space provided on the application. Include the Group/Society fee in your payment.
3. If you wish to subscribe to the monthly PROCEEDINGS OF THE IEEE, check the appropriate box on the membership application and include payment for this subscription.

PASS IT ON !

PRESENT OCCUPATION

Title or Position

Firm name

Firm address Street

City State/Country Zip

1. The primary end product (or service performed) at your plant, and the product (or service) that is your own work. (Insert number code in each box even if the same)

Plant ☐ Your own work ☐

1. Large computers
2. Mini-computers
3. Computer peripheral equipment
4. Data processing systems (systems integration)
5. Office and business machines
6. Test, measurement and instrumentation equipment
7. Communications systems and equipment
8. Navigation and guidance systems and equipment
9. Consumer entertainment electronic equipment
10. Consumer electronic appliances
11. Other consumer electronics
12. Industrial controls, systems and equipment
13. Components and sub-assemblies
14. Materials and hardware
15. Aircraft, missiles, space and ground support equipment
16. Oceanography and support equipment
17. Medical electronics
18. Industrial companies within the OEM incorporating electronic equipment in their end product, not elsewhere classified
19. Independent research, test and design laboratory and consultant (only if you are not connected with a manufacturing company)
20. Government agency and military
21. Industrial companies using and/or incorporating any electronic products in their manufacturing, research or development activities
22. Power generation equipment manufacturer
23. Power production (atomic, electrical, etc.)
24. Utilities, *except power* (telephone, telegraph, pipe lines, etc.)
25. Communication (radio, T.V., police)
26. Transportation services (airline, railroads, etc.)
27. All other commercial users
28. Distributor
29. School, university or library
30. Others (explain) _____

2. Your principal job function. (Insert number Code) ☐

1. General and corporate management
2. Design and development engineering (circuits, components, equipment systems)
3. Engineering services (evaluation, quality control, reliability standards, tests)
4. Basic research
5. Manufacturing and production
6. Engineering support (draftsman, lab assistant, technician)
7. Purchasing and procurement
8. Marketing, including sales
9. Dean, professor, instructor, etc.
10. Student
11. Other personnel (explain) _____

3. Your Principal Responsibility (Insert Code) ☐

1. Management
2. Engineering

Full Signature Date

1/74 Form F-69

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.
345 EAST 47TH STREET, NEW YORK, N.Y. 10017

MEMBERSHIP APPLICATION

Date

Full signature

Date of birth ☐ Male ☐ Female

Were you ever a member of IEEE? ☐ Yes No ☐

PRINT NAME AND ADDRESS for IEEE MAIL

First name Middle initial(s) Last name

Street address

City State/Country Zip code

EDUCATION (Highest level completed)

Name of educational institution

Course Degree received Date

ENDORSEMENT (Name one individual, preferably an IEEE member, who knows you professionally.)

Name (Please print full name)

☐ Entrance Fee and Membership Dues.....March-Aug.31 $ 22.50

☐ Enrollment in Groups/Societies (use codes).....17–1 $ 3.50

Codes; TRANS. MTT 17–1

☐ Subscription to Proceedings of the IEEE..... 3.50 $

TOTAL AMOUNT PAID WITH APPLICATION..... $

FOR OFFICE USE ONLY

Member No.

St./Cntry | Zip Code/City | Reg. | Cn| Sect. | Subsec | County | IPA CODE | Progression | Elect. Date Mo. Yr. | Grade | Birthdate Mo. Day Yr. | Sex | Company Number

10 13 19 21 22 24 26 29 35 36 40 43 48 49 65 73

NEW ADCOM HOLDS FIRST REGULAR MEETING

by Warren Cooper

The meeting of Monday, January 28, heard reports of activities for 1973 as well as plans for the 1974 administrative year. The meeting was held in Atlanta, site of the 1974 Symposium.

Treasurer Nat Lipetz reported the MTT budget in good shape, thanks to the 1973 Symposium and to the active efforts of page charge Chairman Don Parker, who succeeded Bob Garver, the initiator of the page charge solicitation effort. Nat stressed that because of higher printing costs and general price increases, it is essential that we keep the pressure on to ensure that the maximum page charge income and symposium income are brought in, and that unnecessary expenses be minimized.

Past President John Horton reported that the MTT achieved Society status on 10 September and that the formal name of the Society is the Microwave Theory and Techniques Society. A unanimous vote of thanks was given by the ADCOM for the excellent job which John did during his tenure as President of our Society. Under his administration the MTT increased the page allocation for the Transactions to 1,230 pages, expanded technical activities and has reduced the papers backlog.

President Bob Rivers announced the appointment of Harold Stinehelfer of Microwave Associates as Secretary of ADCOM. His address is Microwave Associates, Inc., S. Avenue, Burlington, Mass. 01803.

George Haddad was appointed Chairman of the Awards Committee. Kiyo Tomiyasu, former Chairman, has been elevated to the IEEE Awards Board. Kiyo did an outstanding job as Chairman of the Awards Committee, a very demanding job.

Bob Rivers submitted the name of Don Parker as new editor of the MTT Transactions to take office in mid year replacing Fred Rosenbaum, our present editor. Fred chaired a Selection Committee and pointed out that since the past two editors (he and George Haddad) had been from academic institutions, it seemed appropriate to change the editorship from academia to industry. Don Parker is with Stanford Research Institute which is not real honest-to-gosh industry, but is close to it. Fred's recommendation was confirmed unanimously by the ADCOM. Editor designate Parker is going to be confronted with the problems in his early months in office as the IEEE is currently using eight printing sources as opposed to the three used in the past. In trying to maximize the value we receive for our printing dollar, there will probably be problems until the operation gets shaken down. (It's not a shake down!)

President Bob Rivers passed on the information that at the latest TAB meeting the decision was made to allow, without prior MTT ADCOM approval, the release of the MTT mailing list to any nonprofit organizations desiring to circularize our members. In addition, the MTT mailing list is sold to non-advertisers for 7½ cents a name and to advertisers for 5 cents a name. Upon request the individual member's name can be removed from these lists.

1974 Symposium Chairman Pete Rodrigue reported that things were going well and ADCOM was quite pleased with the facilities and arrangements that we saw in Atlanta. Technical Program Chairman Gordon Harrison reported that there were slightly in excess of 150 contributed papers including a good number from foreign countries.

Chapter Activities Chairman Larry Whicker reported on the many things that have been done during 1973 and planned for 1974. They included support of mailing costs for postcard mailings by the Los Angeles and Washington MTT Chapters, getting an excellent turnout for the Chapter Chairman's meeting in Boulder which has resulted in the Chapter Activities Committee preparing a check list for Chapter officers (to be distributed shortly). 1974 plans include a membership campaign and including the National Lecturer as an invited paper in the Transactions. Dick Sparks, Membership Drive Chairman, reported on membership statistics. Pending final figure verification, it may be assumed that the membership is essentially the same.

Activity in the Standards area was reported by Standards Chairman Bob Beatty, who reported that his goals were to get some of the older projects such as 146–1953 Antennas and Waveguides: Definition of Terms and 147–1972 Waveguide Components: Definition of Terms completed in 1974. Because of the interest of other groups, coordination becomes a major problem in attempting to complete this work and results in flagging interest after a number of years of tackling the problem without seeing the work come to fruition.

Publicity and Public Relations Chairman Box Knox reported on the activity of his committee and indicated that the committee already has a list of trade publications eager to receive MTT news. Bob pointed out that all of us MTT members can help by sending news of MTT related activities including people, details to Bob Knox, IIT Research Institute, 10 West 35th Street, Chicago, Illinois 60616, phone (312) 225–9630, ext. 4007 or George Oltman, Hughes Aircraft Company (268/A55), 8433 Fallbrook Avenue, Canoga Park, California 91304, phone (213) 883–2400, ext. 2293.

Ken Button, organizer of the Sub-millimeter Wave Symposium being held in conjunction with the MTT and AP Symposia in Atlanta this June, reported that he had 65 papers submitted for his Symposium. Papers presented at the Sub-millimeter Symposium will be included as Part II of the December 1974 issue of the MTT Transactions.

As a result of the change in by-laws, proposals for the 1976 and 1977 MTT Symposia are due by the first of May (the 1975 Symposium is being held in Palo Alto). There has been an indication that Ottawa may propose for 1976, also Boston has been suggested as a possible site either simultaneously with NEREM–INTERCON which is being held in Boston for the first time May 11–May 14, 1976. So come on you Chapters, get your proposals in by the 1st of May---if you don't win in '76, maybe you will in '77.

Well those are the ADCOM highlights to the best of my note taking and recollection --- I had to leave to catch a plane before the meeting had closed, so perhaps I missed something. But if I did, my apologies! Let's make this communication a two-way street. I have had my say in this report, if you all have inputs that you feel can help the MTT Society render better service to its members and to the country, world, (and universe), please write!

In order to have one's name removed from external commercial lists sale contact:

Mr. William J. Keyes
Director, Administrative Services
IEEE
345 East 47th Street
New York, N.Y. 10017

and request deletion of your name from such lists.

DIRECTOR'S REPORT

Leo Young
Director, Division IV
Code 5200, Naval Res. Labs.
Washington, D.C. 20390

INVOLVEMENT

IEEE is a large and complex Society, both in membership and in number of committees. It will remain effective and grow only if it keeps the support of its members. IEEE must therefore involve all its members in its activities. But how can we involve more than 160,000 members in active participation?

Fortunately the interest profiles of individual members are all different, since each member is a unique and very special individual. And so there is a large variety of activities within IEEE to interest all members. While many members participate only by reading the Transactions or attending chapter meetings, there are many others who would participate more actively if given the right opportunity.

It is up to the Group or Society AdComs or other IEEE major committees to help these members help themselves and help IEEE. Many activities can only be carried out by people meeting face to face and discussing the issues across a table. Such activities can often be organized on a local basis which then enables most committee members to live close enough to meet conventiently. But the overall organization and delegation must be from the center, so that these diverse activities fall into a pattern and add up to a meaningful whole.

Examples range from standards to profgssional activities. For example, Group G may need to promulgate standards in one of the disciplines it covers. Suppose that a discipline D is important in an industry heavily represented in Section S. The recognition of the need should be brought to the attention of the AdCom which could then organize a Standard Committee D of Group G whose members would reside mostly in Section S. If you haven't been asked to serve on a committee, why not let your AdCom know of your interest now, or discuss it with your chapter officers or other local IEEE members? What is your special interest?

TECHNOLOGY FORECASTING AND ASSESSMENT PROJECT ANNOUNCEMENT

by Al Clavin

President R. A. Rivers has asked me to act as Project Coordinator for the Technology Forecasting and Assessment Project. In this regard, I am soliciting help from any member interested in participating in this activity. The areas of technology forecasting will follow the lines of our technical committees and help is solicited in any and all areas. Please address the undersigned to start your participation.

A. Clavin, 268/A55
Hughes Aircraft Company
8433 Fallbrook Avenue
Canoga Park, CA. 91304

RESOLUTION ON HUMAN RIGHTS

The enclosed resolution recently passed by the Board of Directors may be of interest to those who follow the daily papers. For example, Andrei Sakharov, the Soviet nuclear physicist, was quoted in U.S. national papers on September 9, 1973 as follows:

> "Sakharov said the mutual trust needed for detente depends on the openness of Society as well as democratization, freedom of dissemination of information and the exchange of ideas and respect for all the basic rights of the individual, particularly respect of the right . . . to choose the country in which he wishes to live."

The following day, the papers reported that National Academy of Sciences (NAS) President Philip Handler had sent a cable to his opposite member in the Soviet Union, Soviet Academy of Sciences President M. V. Keldysh, expressing the "deep concern" of the NAS Council for the welfare of Dr. Sakharov, and warning that if further measures were taken against Skharov, "it would be extremely difficult to imagine successful fulfillment of American pledges of binational scientific cooperation . . ." (The cable is given in full in Science, Vol. 181, pp. 1148–1149, 21 September 1973.)

It is known that Handler's cable was sent only after numerous private expressions of concern by many NAS members had been made, with little or no effect.

The IEEE Board of Directors passed the following resolution the following day (11 September 1973).

The Board of Directors of the IEEE, having learned with dismay the serious penalties imposed on engineers and scientists who desire to emigrate from the Soviet Union, requested that the following resolution be respectfully forwarded to President Siforov of the Popov Society, and to President M. Keldysh and Vice President V. A. Kotelnikov of the Soviet Academy of Sciences, with an urgent request to render assistance:

"The Board of Directors of the Institute of Electrical and Electronics Engineers, an organization of approximately 160,000 electrical engineers all over the world, is keenly interested in the welfare of engineers and scientists everywhere.

"This Board views with great concern the infringement on basic freedoms wherever they occur, particularly when engineers and scientists are singled out as victims because of their profession.

"This Board regrets that many engineers and scientists and their families have been denied their right to emigrate in violation of recognized international practices*, often solely because of their professional qualifications in Science and Engineering.

"These practices seriously endanger the spirit of transnational friendship and cooperation on which the operation of this Institute is based. The Board of Directors of the Institute of Electrical and Electronics Engineers appeals to its sister organizations, and the National Academies of Science and Engineering in every country, to join in support of equal human rights for engineers and scientists."

*The International Covenant on Civil and Political Rights, U.N. document A/RES/2200 (XXI), adopted by the United Nations's General Assembly on 16 December 1966, states in Part III, Article 12, Paragraph 2: "Everyone shall be free to leave any country, including his own."

WHAT NEWS ??

The ADCOM Publicity and Public Relations Committee was formed early in 1973 by then President John Horton, in order to facilitate a more active interface between the ADCOM and the Microwave community.

The PPR committee does not make the news - - YOU DO! ! When you - - plan a symposium, a special conference, a social function, engage an unusual or prominent speaker, win an award, present an award, engage in public or socio-econmic affairs, political affairs. Both professional and non-professional activities of members are of interest. We want the world to know that S–MTT people do not fit a stereotype, are not easily classified, but are resourceful at whatever they choose to do. Please Let Us Know About Your S–MTT Related Activities Including The People Details. Write to:

Bob Knox
IIT Research Institute
10 West 35th Street
Chicago, Illinois 60616
(Phone: 312/225–9630, Ext. 4007)

George Oltman
Hughes Aircraft Company (268/A55)
8433 Fallbrook Avenue
Canoga Park, California 91304
(Phone: 213/883–2400, Ext. 2293)

Your cooperation is necessary for the success of the PPR Committee.

OBITUARY

ROBERT KRAUSZ, 49, died unexpectedly from a stroke on Wednesday, December 19, 1973. Mr. Krausz was the founder of Rantec Corporation, a Calabasas, California, electronics firm, and served as its President from 1956 to 1967 when it became a division of Emerson Electric Company. In 1951 he had founded Microwave Engineering Corporation of Los Angeles and served as its President until 1956. Most recently he had been a Vice President of International Rectifier Corporation of Los Angeles. Mr. Krausz was born in Vienna, Austria and came to the United States in 1938. He received a bachelors of engineering degree from Ohio State University in 1947. He belonged to the Engineering Societies Tau Beta Pi and Eta Kappa Nu. He was recently honored as an outstanding alumnus of Ohio State University. He was a Senior Member of the Institute of Electrical and Electronics Engineers and had served one year as Chairman of the Los Angeles Section. He served as Master of Ceremonies at the MTTS Symposium Banquet in 1970.

NEWLY ELECTED IEEE FELLOWS

At the November 29–30 meeting of the IEEE Board of Directors 116 members of the Institute were elevated to grade of Fellow. This mark of unusual distinction is conferred on persons of outstanding and extraordinary qualification in their particular fields. The nineteen new fellows listed below are MTT Society members.

Lawrence K. Anderson	For contributions in the field of holographic optical memories.
Marvin Cohn	For contributions to millimeter wave technology, low-noise microwave integrated circuitry, electromagnetic surface wave excitation, and transmission.
Herbert Doring	For contributions to microwave electronics and to education.
Arwin A. Dougal	For contributions to the theory and teaching of plasma science and physical electronics.
John D. Dyson	For contributions to the development of log-spiral antennas.
Wolfgang W. Gaertner	For contributions to the development of microelectronic circuits and systems with low power consumption, high packing density, and adaptive self-healing features.
John J. Guarrera	For contributions to microwave technology.
Friedrich W. Gundlach	For contributions to the development of microwave tubes.
Bernard Hershenov	For contributions to microwave devices.
Bharat K. Kinariwala	For contributions to research in circuit and system theory and to engineering education.
Kaneyuki Kurokawa	For contributions to microwave solid-state circuits, oscillators, and devices.
Akio Matsumoto	For contributions to the theory and design of electrical networks and microwave filters.
Minoru Okada	For contributions to air traffic control automation and navigational electronic engineering.
Oliver T. Purl	For contributions to high-power traveling-wave tubes, and for leadership of microwave electron device engineering.
Leon J. Ricardi	For contributions to the theory and design of microwave antenna systems for communication satellites and deep space radar applications.
Shigebumi Saito	For contributions to microwave and laser technology.
Robert A. Soderman	For contributions to the development of instrumentation and measurement methods, and for leadership in the establishment and acceptance of associated standards.
*Hidenari Uchida	For contributions to the theory and practice of VHF and UHF antennas.
Hans G. Unger	For contributions to the theory of multimode millimeter waveguides.

*Deceased October 1973.

US – JAPAN SYMPOSIUM ON MICROWAVE MEASUREMENTS

On December 7, 1973, the IEEE Tokyo Chapter of MTT (Chairman: Professor S. Saito, Tokyo University) and the Japan Industrial Technology Association (JITA) (Chairman: Dr. T. Momota) sponsored a Joint US–Japan Symposium on Microwave Measurements. The Symposium Program was as follows:

1. Mr. R. Ishige, Electrotechnical Laboratory, Tokyo, "RF Standards and Traceability in Japan"
2. Dr. N. Kuroyanagi, Yokosuka Electrical Communication Laboratory, "Measurement of High Speed Pulses"
3. Dr. H. J. Kuno, Hughes Aircraft Co., Torrance, Calif., "Millimeter Wave Measurement Techniques"
4. Mr. C. L. Cuccia, Philco–Ford Co., Palo Alto, Calif., "Measurements in High Speed Digital Quadriphase Modulation Systems"
5. Dr. R. W. Beatty, National Bureau of Standards, Boulder, Colo., "Automatic Measurements of Network Parameters"

Following a suggestion by Dr. Kenjiro Sakurai of the Electrotechnical Laboratory, Tokyo, and Dr. R. C. Sangster of NBS, Boulder, Colorado, the Symposium was organized by a joint committee headed by Dr. Ichiro Tajima, Executive Director, Anritsu Electric Co. Ltd., and including on the U.S. side Dr. R. W. Beatty, Electromagnetics Division, NBS. Chairman for the morning session was Professor Toshio Makimoto, Osaka University, and for the afternoon session, Dean Sogo Okamura, Tokyo University. A summary of the papers was available for ¥ 1,000 ($3.57) to the approximately 120 attendees. After the Symposium, everyone was invited to a reception at the nearby U.S. Trade Center, where they were holding a microwave circuits, components and instrumentation exhibition (the first of its kind in Tokyo). There were approximately 63 exhibits on 2 floors of the U.S. Trade Center.

This Symposium was the first Joint US–Japan Symposium sponsored by the Tokyo MTT Chapter. They have been asked by E. W. Matthews, Chairman, 1975 S–MTT Symposium, to prepare an invited session on "Millimeter Wave Communication in Japan" for the 1975 S–MTT Symposium in Palo Alto, and have accepted the task. Professor S. Saito will work with S. Adam, Chairman of the Technical Program Committee.

RIBBON CUTTING CEREMONY AT OPENING OF EXHIBITION, *(Left to Right)* Mr. Bruce W. Strong, Director, U. S. Trade Center, Tokyo; Unidentified Secretarial Person (may be Custodian of the Scissors); Mr. Natale H. Bellocchi, Counselor for Commerical Affairs, U.S. Embassy, Tokyo; Prof. Sōgo Okamura, Dean, Engineering School, University of Tokyo; Dr. Robert W. Beatty, Senior Research Scientist, Electromagnetics Division, N.B.S. Boulder, Colo., USA; and Mr. Max Miles, Deputy Director, U.S. Trade Center, Tokyo.

BOOK REVIEW

HIGH FREQUENCY* DIELECTRIC MEASUREMENT –

Edited by J. Chamberlain and G. W. Chantry

This book constitutes the proceedings on the Tutorial Conference on Measurement of High Frequency Dielectric Properties of Materials held at National Physical Laboratory, Teddington Middlesex, England on 27–29 March 1972. These papers were presented to a very knowledgeable audience and therefore the less important details were omitted in many cases. As a result the text does not stand alone for use as a guide to the setup of a measurement technique. The Proceedings is recommended for those persons who are engaged in measuring the properties of dielectrics. It covers a wide range of measurement techniques for different forms of material and different measurement methods. The error analyses presented with the measurement techniques add to the completeness of the contents. It is interesting to note that disagreements still exist among workers in this field. For example, substantial disagreement is found concerning the sample thickness required for accurate measurement of relative dielectric constant and loss tangent. It is also notable that comparisons of data are only good for the same sample, and that some attendees were still not convinced that the relative dielectric constant of a ceramic material, in general, increases with temperature.

All in all, the Proceedings is a collection of a set of excellent papers on dielectric measurements that cannot be found elsewhere in one volume. It would be a valuable addition to the libraries of those actively engaged in this area and a good reference for those initiating such measurement activity.

Reviewed by Harold Bassett

*Price 10 pounds

High Frequency means 1 – 1000 GHz

Published by IPC Science and Technology Press Ltd. 1973
32 High Street
Guildford, Surrey GUI 3EW, England

SUMMARY OF OPERATIONS AND ACCOMPLISHMENTS OF THE MTT TRANSACTIONS IN 1973

by Fred Rosenbaun

No special problems were encountered in the publication of the 21st volume of the Transactions (1973). Table I shows some statistics concerning the Transactions. A total of 198 separate technical items including papers, short papers and letters were published, with 47% coming from authors outside the United States. A total of 920 pages were charged to the Transactions, including covers, blank pages, index, etc., compared with our budget of 900 pages.

Four times as many letters were published in 1973 as in 1972. The short papers outnumbered the papers slightly, indicating some balance, although the papers were typically three times as long as the short papers. The average paper length is 7.2 pages, while the short papers averaged about 2.2 pages. The number of computer descriptions dropped from 8 in 1972 to 4 in 1973.

Table II shows the distribution of authors by country and by organization. Papers from the United States come equally from industry and universities, with a strong input coming from government sponsored laboratories. However, the vast majority of international papers come from universities, indicating either the absence of a strong foreign microwave industry, or a lack of interest in publishing industrial research and development work. This latter tendency may also be inferred from the U.S. statistics.

During the period 1 January to 31 December 1973, MTT received a total of 291 new submissions. Of these,

180	(61.9%)	were accepted,
51	(17.5%)	were rejected
55	(18.9%)	are still being reviewed, or have been returned to the authors for major revision before a final decision is made,
4	(1.4%)	were transferred to other journals,
1	(0.3%)	was withdrawn.
291	100%	

Three special issues were published in 1973:

April 1973 – "Microwave Acoustic Signal Processing"
Guest Editor – T. Reeder

November 1973 – "Solid-State Microwave Power Amplifiers"
Guest Editor – M. E. Hines

December 1973 – Symposium Issue

Five special issues are in progress for 1974 (Vol. MTT–22):

March 1974 – "Computer Aided Microwave Practices"
Guest Editor – J. Bandler and D. Varon

June 1974 – "Microwave Control Devices for Array Antenna Systems"
Guest Editor – L. R. Whicker

October 1974 – "Microwave Communications"
Guest Editor – Reed E. Fisher

December 1974 – "Symposium Issue"
Guest Editor – C. Rucker (Georgia Tech)

December 1974 – "Submillimeter Wave Symposium Issue"
Guest Editor – K. Button (MIT, National Magnet Lab)

One special issue has been planned for 1975 and a call for papers issued.

January 1975 – "Integrated Optics"
Guest Editor – D. Marcuse, Bell Labs

TABLE I
A BREAKDOWN OF THE 1973 TRANSACTIONS

CATEGORY	NUMBER	PAGES	AUTHORS DOMESTIC	AUTHORS OVERSEAS	% OF TOTAL PAGES EXPENDED
Papers	83	594	48	35	64.56
Short Papers	89	191.5	44	45	20.08
Letters	22	15.8	11	11	1.72
Computer Prog. Descriptions	4	2.8	1	3	0.3
Contributors' Biographies		24.8			2.7
Editorials		4.5			0.4
Information for Authors		3			0.33
Membership Ads		3			0.33
Conference Reports		6			0.66
Foreign Abstracts		3			0.33
Index		14			1.52
Covers		48			5.22
Blanks and space lost starting new sections		9.6			1.04
Totals	198	920	104	94	99.19%
Budget		900			
Over-run		20			2.17%

TABLE II
DISTRIBUTION OF AUTHORS APPEARING IN MTT-21

COUNTRY	NO. OF PAPERS	ORGANIZATION UNIVERSITY	INDUSTRY	GOVERNMENT LABS
United States	104	43	41	20
United Kingdom	25	16	3	6
Canada	17	17	0	0
Australia	9	6	0	3
Japan	8	2	6	0
Italy	7	2	1	4
Sweden	5	5	0	0
Germany	4	2	2	0
Switzerland	4	3	1	0
France	3	1	1	1
India	3	2	0	1
Egypt	2	2	0	0
Turkey	2	2	0	0
Belgium	1	1	0	0
Brazil	1	1	0	0
Ireland	1	1	0	0
Netherlands	1	0	1	0
Poland	1	1	0	0
Total 18	198	107	56	35

CALL FOR PROPOSALS FOR 1976 AND 1977 MTT–S SYMPOSIA SITES

by Don Parker

The MTT–S Administrative Committee at its September 1973 meeting approved a change moving ahead the date for selecting the Symposium site. The Symposium site will be selected three years in advance at the AdCom meeting held in connection with each Symposium. This means that in June 1974 the sites for both the 1976 and 1977 Symposia will be selected.

The purpose of this notice is to invite local MTT–S Chapters to submit proposals for hosting either the 1976 or 1977 MTT–S Symposium. While many organizations hold their meetings always at the same site, it has been the practice of the IEEE Microwave Theory and Techniques Society to delegate the responsibility for its annual International Symposium to a local MTT Chapter under the aegis of the parent organization. This procedure has worked out well over the years. It helps to increase interest in microwaves in the particular geographical region and to strengthen the MTT local chapter involved and its bonds to the MTT national organization.

Any MTT Chapter can apply to MTT–S Administrative Committee for the privilege of hosting the MTT Symposium. To put the site selection on a three year advance schedule, both the 1976 and 1977 sites will be selected at the June 1974 MTT AdCom meeting in Atlanta, Georgia. Unsuccessful chapters are encouraged to resubmit their proposal the following year.

The location is normally rotated in such a manner as to give an opportunity to all major areas. The locations of recent symposia are: 1969–Dallas, TX; 1970–Newport Beach, CA; 1971–Washington, DC; 1972–Chicago, IL; 1973–Boulder, CO; 1974–Atlanta, GA; 1975–Palo Alto, CA.

The following guidelines are suggested to assist in the preparation of a proposal.

(1) The local chapter should select a Steering Committee of six to ten people to meet and plan the type of symposium the chapter would like to sponsor. Additional people can be added later as needed.

(2) Local arrangements are the most important first item to cover. Tentative arrangements should be made with a hotel for 400 to 600 guests and at least four conference rooms. One or two of these rooms should be able to seat in excess of 300 people.

(3) Identify a proposed Symposium Chairman and Technical Program Chairman. They will be key individuals in organizing the committee to prepare the proposal.

(4) The last few MTT Symposia have included exhibits. These have been successful, and chapters submitting proposals should consider including exhibits.

The proposal should discuss

1. Introduction and Summary

   Site and proposed dates.
   Arguments favoring proposed site.
   Microwave activity and number of MTT members in the area.
   Special features of proposed technical program.
   Arguments for accepting this proposal.

2. Arrangements

   Hotel(s), distance from airport, available air and ground transportation. The hotel, meeting rooms (number and capacity), number and rates of rooms set aside for Symposium, special rates if any for Government and university attendees, special local facilities and amenities.

3. Technical program

   Technical content and orientation, advanced areas to be included, invited papers.

   Number of sessions, parallel sessions, keynote session, evening sessions, panel discussions, student papers, if any.

4. Exhibits (if any)

5. Proposed Committee Appointments

   The following committees should be considered: Steering, Technical Program, Digest, Publicity, Finance, Exhibits, Local Arrangements, Ladies Program.

6. Finance

   Detailed budget with conservative registration estimates. Consider possibility of Exhibits.

7. Local Arrangements and Special Events

   Tours, if any, of microwave facilities, cocktail party and banquet, ladies program.

8. Proposed Schedule and Publicity

9. Symposium Digest

10. Endorsements

    From local IEEE Section, one or more MTT–S chapters in the area, etc.

    Summarizing, the proposal should address itself as much to the technical program as to the other elements of the Symposium. A lot of useful information can be obtained from proposals submitted in previous years. The proposal should be submitted to MTT AdCom members at least 1 month ahead of the meeting. Distribution to AdCom members should be arranged through IEEE Headquarters. Any questions can be addressed to members of MTT–S AdCom, or to D. Parker, Chairman, MTT Meetings and Symposia Committee, Stanford Research Institute, Building 406B, Menlo Park, California 94025. A representative should plan to attend the AdCom meeting for a personal presentation.

REPORT OF S–MTT STANDARDS COORDINATING COMMITTEE

The status and goals of the parent committee and its committees are summarized as follows:

A. Roster of Members

R. W. Beatty, Chairman
S. Adam
P. Burgmeier
E. L. Komarek
R. V. Lowman
G. L. Matthaei
S. W. Rosenthal
P. H. Smith

B. Status of Committee Work

1. Waveguide Standards Committee

R. V. Lowman, Chairman
P. Bergmeier
G. Deschamps
W. Kahn
D. LeVine
S. Rosenthal
P. Smith
J. Taub
D. Yenoli

This committee has the following IEEE standards projects:

146–1953 ANTENNAS and WAVEGUIDES: DEFINITIONS OF TERMS

Status: It was reported in May 1972 that a revision of IEEE 146 "Definitions of terms for waveguides" was very nearly completed (J. Taub). A draft has not yet been submitted to the Standards Coordinating Committee.

147–1972 WAVEGUIDE COMPONENTS: DEFINITIONS OF TERMS

Status: It was reported in May that a draft had been completed (D. LeVine) and was undergoing final typing. It was planned to submit this to the IEEE Standards Board during the last quarter of 1972. This draft never got that far and is currently under review by P. Burgmeier.

P456 TYPE DESIGNATIONS FOR WAVEGUIDES

Status: The Waveguide Standards Committee is not interested in working on such a project, since it is felt that the IEC system should be used in general, and the other systems presently available for local use in the U.S.A. are adequate.

P457 NONLINEAR and ACTIVE WAVEGUIDE COMPONENT TERMS

Status: Although this project was approved by the IEEE Standards Board in March 1972, work has not begun (D. LeVine).

2. Waveguide Measurements Committee

S. Adam, Chairman
P. Szente, Secretary

Members: I. Hawley (Signal Analysis)
P. Lacy (Noise)
K. Mallory (Power)
T. Otoshi
D. Ritting (Network Analysis)
J. Rooney (Frequency)
R. Ruttenberg
G. Schafer
F. Storke

Associate Members: J. Jasper
D. Leeson
T. Olson
E. Oxner
L. Robinson

This committee has the following IEEE standards projects:

148–1959 (1971) WAVEGUIDE and COMPONENT MEASUREMENTS

Status: This work has been continuing since November 1968. It is approximately half completed. Meetings are held bi-monthly.

P–480 WAVEGUIDE TEST FREQUENCY STANDARD

Status: This project was approved by the IEEE Standards Board on 20 September 1972. The subcommittee has been organized (see 2a, above) and meetings were held in May and August 1973. R. Larson is currently preparing a draft standard.

3. Microwave Magnetics Committee

L. Wilson, Co-chairman
R. West, Co-chairman

Members: C. Boyd
H. Bussey
W. Courtney
J. Green
G. Rodrigue
F. Rosenbaum

This committee has recently been re-formed after a period of inactivity. It has the following IEEE Standards projects:

P394 MAGNETIZATION IN EMU and MKSA UNITS

P394 MAGNETIZATION IN EMU and MKSA UNITS

Status: A draft statement was prepared in December 1969 "Standard MM–1 (R–1), The Quantity Magnetization in MKSA Rationalized Units".

P395 GYRO MAG RATIO

Status: A draft statement "Standard MM–2 (R–1), The Gyromagnetic Ratio in MKSA Rationalized Units", was prepared in December 1969.

P396 MEASUREMENT OF MAGNETIZATION, CURIE TEMPERATURE

and:

P397 LOSS MEASUREMENT IN INSULATING MAGNETIC MATERIALS

Status: No progress to report, as yet.

C. Goals

We need to get some of the older projects such as 146–1953 and 147–1972 completed this year, if possible. Difficulties have consisted of coordination with work of other groups, particularly I & M, and with the problem of sustaining interest and activity of our own work over the years. A particularly difficult problem is resolving differences of opinion concerning definitions. Once a definition has been placed in the IEEE Dictionary, it may be justification for doing so.

We will continue our efforts at coordination with other groups and strengthen these efforts by appointing additional members to our committees who also hold membership with groups with whom we need to coordinate our efforts.

We also have the goal of cooperating with International Standardization work such as that of the IEC. In addition to cooperation, we also need to exert leadership, where appropriate.

A final goal is to keep alert to new areas that are ready for standardization efforts so as to initiate work at the proper time. The suggestions of the S–MTT Technical Committees would be particularly valuable in this regard.

WR SWASHBUCKLING

(A comment elicited by Bob Beatty's note in the Fall 1973 Newsletter)

by Mike Brady

Once upon a time, in the early days of our profession, the daring young man sawed off lengths of decorative bank metalwork and used it to help detect unseen aircraft.

Miraculous!

Then, in keeping with his swashbuckling élan, he spoke of his work only in mnemonics: "King Xerxes Can Seduce Lovely Princesses."

Risqué!

But then his military bosses decided to put numbers on things, as was their custom.

Secrecy.

To civilians, unimpressed with the military love of numbers, it seemed better to create a system with meaning. So they decided to describe waveguides, as they new were called, in terms of their dimensions, as had the carpenters before them who put up the decorative bank metalwork. But, using the stuff for purposes different from those of their predecessors, they chose inside instead of outside dimensions.

WR was born.

Then people started making waveguides as waveguides, in greater variety, and of lesser interest to people decorating banks. So WR grew. But now many sizes made more scientific sense than carpentry practicality, so the WR numbers didn't always look so nice as they had when they were thought up to replace the Swashbuckler's risqué mnemonic.

Rounding off was born.

But there were people in the world who, having ten fingers, were not very fond of dividing things into 5280 or 12 equal parts.

"Curious!" said the Swashbuckler.

But some of these folks were pretty important: they actually used most of the world's waveguide. Navigational aids and telecommunications were their games, and they were regulated by the frequency-allocation people, who nobody could dispute. So they thought in terms of frequency. And they got together and worked out a system. It wasn't risqué. It had nothing to do with bank decoration. But it made sense to all concerned.

153–2 was born.

Even in the Swashbuckler's own country, prudent men saw the writing on the wall, and explicitly agreed (1) on IEC 153–2.

Internationally smart.

But some swashbucklers still protested; they simply couldn't forget their first WR love.

Maybe we should put them out to pasture, or give them an old bank to play with?

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(1) p. 5 of IEC Publication 153–2 delineating the IEC standard rectangular waveguide nomenclature system lists the United States of America as one of the 17 countries voting explicitly in favor of the document.

Dear Editor:

I would like to offer the following observations on Mr. Beatty's note regarding waveguide type designations in the Fall 1973 Newsletter (p. 10).

I agree personally with Mr. Beatty's comment that nomenclature related to physical dimensions is easier to work with than frequency related nomenclature. However, the introduction of a new U.S. system would cause great confusion and its benefits would probably not be worth it.

I strongly favor adopting the IEC nomenclature. As Mr. Beatty points out, "it is impossible to satisfy everyone". Virtually every other country has adopted the IEC system. Waveguides and waveguide components are becoming more and more significant to U.S. suppliers in international trade, and an international nomenclature seems most desirable.

Very truly yours,

J. S. Brown
Chairman, EIA Standards Committee TR 21.1,
Waveguides and Fittings

Third Class

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