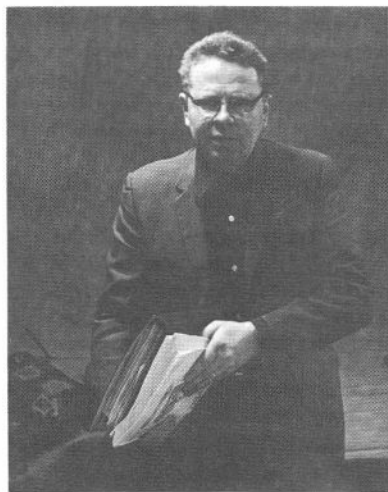


EDITOR: G. P. Rodrigue

School of Electrical Engineering, Georgia Tech, Atlanta, Georgia 30332

Number 70, Winter 1973

HORTON OUTLINES GOALS FOR '73 ADCOM



Bob Rivers

ADCOM Meeting Report

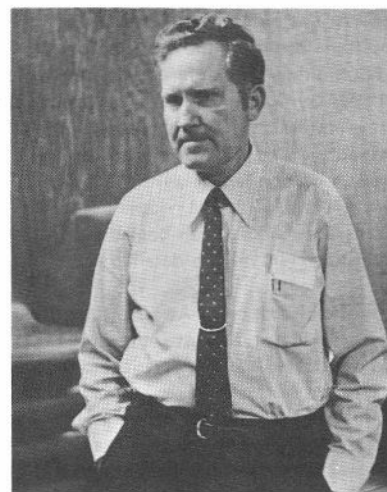
Robert A. Rivers, Vice President

There is either something specially attractive about the Boulder area, or the timing of the ADCOM meeting on the day after the Symposium Technical Program Meeting resulted in all of the Adcom members except two being present at the meeting.

John Horton outlined what he felt should be GMTT Goals for 1973. These Goals were as follows: 1. Establish a Five-Year Plan for the GMTT; 2. Achieve Society Status for the GMTT; 3. Establish the W. W. Hansen Award; 4. Expand the technical activities (solid-state, communications systems, microwave transistor technology); 5. Reduce the papers backlog for the Transactions; 6. Establish GMTT sponsorship for the MM and Sub-MM Conference; 7. Establish a closer working relationship between GMTT and SSCC, QEC, C-SU, IEEE Conv., Wescon, European Microwave Conference, local conferences; 8. Revise Bylaws and update; 9. Increase activities in Membership support areas, Chapter activities, Newsletter, Membership drive; 10. Increase activities in

Meetings and Symposia area, closer ties with other conferences, more emphasis on GMTT Symposium, increase coverage in Transactions; 11. Provide more publicity to GMTT functions, Transactions, Special Issues, Symposium, Special Awards; 12. Provide microwave oriented talks for distribution, i.e., 1973 and 1974 GMTT National Lecturers' talks; 13. Provide GMTT speakers to Universities; 14. Complete ADCOM Committee Handbook of Operations Procedures.

Gene Torgow lead the discussion of Long Range Planning and specifically the Five Year Plan needed to support an application for Society status. He indicated that we needed to agree on our goals before making a five year plan. The discussions were in the following areas: Application and Technology versus Basic Science coverage, Mergers with related Groups, and a name change to indicate a change in emphasis. The writer introduced his division of the Body of Knowledge into three areas: A. General Theory, B. Nascent General Theory, and C. Special Solutions. He felt that we had in the past supported areas A and B, to the detriment of C in publications and awards. George Haddad indicated that it was easier to get papers in areas of General Theory or Nascent General Theory

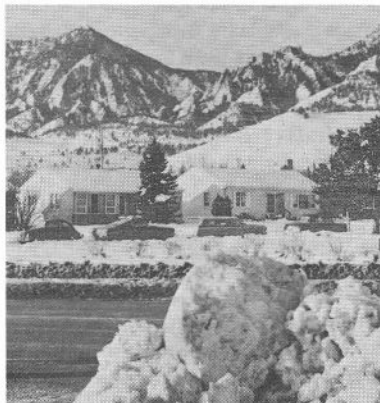


John Horton

because of company restrictions. He was supported by Fred Rosenbaum and by Pete Rodrigue. Sy Okwit pointed out the QE success with a Technology Oriented Symposium. At the conclusion of the discussions a unanimous show of hands was given in support of the general concept of broadening the outlook toward engineering and applications. On the question of Mergers, a straw poll taken on the question of exploring the possibility of merger showed approximately two thirds in favor. No decision could be reached on a name change, a specific change having been voted down. The name change was given back to the committee with the general feeling that it should not be approached in haste.

The technical aspects of Long Range Planning had been completely reported on by Harold Sobol at the September meeting. Hal Altschuler further reported on a questionnaire study of members desires indicating a general interest in more applied rather than theoretical interests. In addition there was an expressed interest in some form of merger across the AP-ED-MTT areas.

(continued on page 2, column 1)



Scene outside ADCOM Meeting

(ADCOM Report continued)

Sy Okwit moved that the officers prepare a petition for Society status and the Motion was passed.

Dave Wait reported on the progress of the 1973 Symposium indicating that the arrangements were in generally good shape. Some problems were indicated in the exhibits and listings areas with assistance needed in talking with specific companies. Bob Beatty reported that the Technical Program had been finalized with 105 papers accepted. Provision for late news items will be made. The committee was taken on a walking and bus tour of the technical meeting, exhibit, and banquet facilities. The dormitory rooms that will be available are in a modern high rise building and are quite comfortable and convenient.

Pete Rodrigue reported on progress of the 1974 Symposium in Atlanta. The budget was presented at a break-even level of 275 Attendees. At this point Ken Button made a presentation promoting the inclusion of a MM and Submillimeter Conference jointly with the 1974 Symposium. There was general support even though there are problems with competitiveness, publication schedules and costs. A motion by the writer that the MTT work with MM/Sub-MM people to establish a conference in 1974 was passed unanimously. Ken Button will make a detailed proposal at the next meeting.

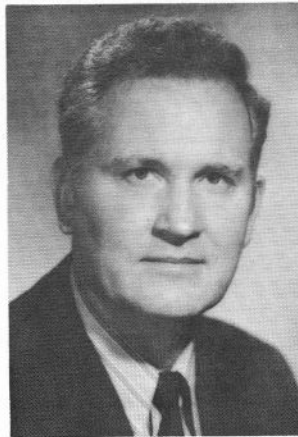
In the discussion of Awards, the difficulties of funding and maintaining an IEEE field award resulted in a decision to reduce the amount of the W. W. Hansen award to \$500.00 and to make it a group award. This was an informal action since it is a By-Law item and cannot be changed without adequate notice.

Larry Whicker reported on the Chapter Communications problems with some Sections not being able to provide adequate support for notices of meetings to members. He requested that \$1500.00 of his funds be made available for the use of Chapters where needed specifically for Chapter Communications. The request was approved unanimously.

Fred Rosenbaum submitted a written report on publications. There were 914 pages of Transactions published last year. Overseas and Canadian authors contributed 93 items and Domestic Authors contributed 91 items. He has scheduled three special issues for 1973 and four for 1974.

Bob Garver has collected and analyzed the information on pages charges, who pays them and who doesn't. The analysis on an industry-university basis is available on request.

George Oltman reported on a potential organizational change that may affect MTT Chapters in Metropolitan areas. A proposal has been made to consolidate Chapters into Division Chapters in the Metropolitan Areas. There then might be several Group Chapters in a Metropolitan Section reporting to the Divisional Director. A response of the affected Metropolitan Chapters is needed before the March meeting.



PRESIDENT'S MESSAGE

by J. B. Horton

When I began work to take up the task of President of the ADCOM, I found myself in the awkward position of being both critical and complimentary toward the ADCOM in the past two years. As almost everyone in IEEE knows, members of the ADCOM were extremely active in the social-economic area during this time period. The objective was to alter the IEEE Constitution to include social-economic activities. It is unquestionable that this effort, under the guise of "professional activities," was successful and that it played a large part in eventually causing a change in the IEEE Constitution. In the middle of all this social-economic activity, however, it was sometimes difficult to remember that the primary purpose of MTT is to serve its members in the technical, scientific, and literary areas.

Thanks to efforts of our silent majority of truly professional members, MTT has continued to be a leader in our chosen areas of expertise. The Transactions, the G-MTT symposia in Washington and Chicago, the technical committees, chapter activities, and other supporting activities have continued to function. This effort was equally successful, as shown by the innovations introduced into these activities and the success of the Group's programs.

The question I faced at the beginning of this year was how much effort should the Group devote to social-economic activities during 1973. After reviewing the work to be done by our ADCOM committees, it was obvious that we cannot continue to devote a major part of the ADCOM to social-economic activities without jeopardizing the Group's principal activities (at one time one third of ADCOM's elected members were devoted to social-economic activities). The answer is that the ADCOM should get back to work on those activities which the group is chartered to do and which we are most capable of doing, i.e., service to the Group's members in the technical, scientific and literary areas. We will continue to support social-economic activities, however, through representation on the IEEE committees responsible for these activities. G-MTT representation is not defined yet, but as details of the Constitutional changes are worked out, this will become clear.

Meanwhile, Group activities for 1973 have started to build up. The program for the 1973 G-MTT Symposium in Boulder has been completed. The 1973 Symposium promises to be an outstanding meeting. I hope that you can attend.

Work in chapter activities has continued to increase over the last few years. This effort was strengthened at the January ADCOM meeting by the allocation of \$1500 to support chapter-to-chapter member communications. Although the Group has supported chapters for special functions in the past, this is the first time funds were made available for Group support of routine chapter activities (this is normally a function of the IEEE Sections).

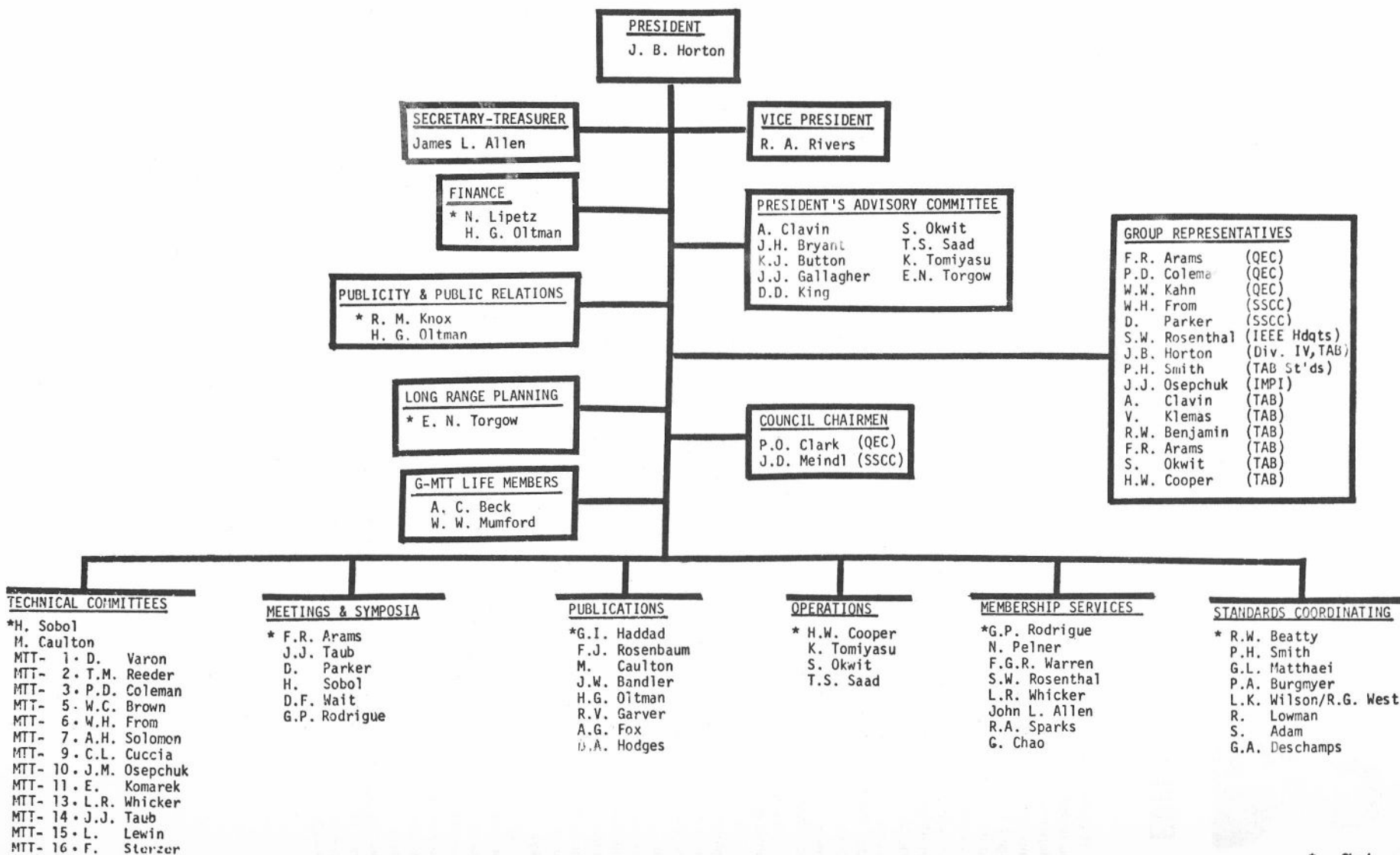
A third activity, which may have a long term affect on G-MTT symposia in the future, is the 1974 G-MTT Symposium to be held in Atlanta. This meeting is a joint G-MTT/G-AP meeting. At the January ADCOM meeting, ADCOM approved another conference for this meeting. This is a sub-millimeter wave conference to be organized by J. J. Gallagher of Georgia Tech and K. J. Button of MIT. The sub-millimeter area has been one of the Group's principal areas of interest in the past, but the meeting in Atlanta will be the first which we will take an active role in a sub-millimeter wave conference.

These are only three of the many activities the Group is actively involved in. The success of all the Group activities, however, depends on the individual contribution of those members involved. We welcome your support, either through direct involvement, or through suggestions and comments of the planned activities. Please feel free to write or call any of the ADCOM members concerning the Group's activities.

ADCOM ORGANIZATION '73

MICROWAVE THEORY AND TECHNIQUES GROUP

February 1973



* - Chairman



EDITORS NOTES

by Pete Rodriguez

It's time for MTT to chart a new course and define a set of goals for development. That was the thrust of the January ADCOM Meeting as described on page 1 for all to see. The membership should note ADCOM plans and "speak now or forever —!" You have of late been somewhat less than outspoken on the subject of long range planning, and as a result ADCOM members have resorted to the reading of tea leaves, dowsing for knowledge, and other sources of inspiration. All are agreed that MTT should move toward more applied areas in symposia and publications, toward a broader scope of interest, and toward society status (whatever that means).

The Denver Symposium will this year highlight "Applications" as the Chicago group did "International Microwaves." The '74 Symposium in Atlanta will apparently highlight togetherness as the Microwave, GAP, URSI, Millimeter and Sub-millimeter Wave, and Radome symposia all meet on the Georgia Tech campus during the same week. It should provide for an interesting pot-pourri in the hallways.

John Horton outlines his program in the President's Message, and his organization chart on page 3 indicates that ADCOM is organized to serve the MTT membership. Do you agree with the course charted or can you cite other ways in which we can better serve your needs? Now that the industry is recovering from the recent economic slump and job prospects are picking up what should the group as an organization of engineers be pursuing?

NEWLY ELECTED IEEE FELLOWS

As of Jan. 1, 1973 a total of 117 new Fellows of IEEE were named. Somewhat over 10% of these were MTT Group members, fourteen to be specific. We salute these members listed below together with the citation of their outstanding contributions. Congratulations on this well deserved recognition of your professional achievements!

Bertram A. Auld	For contributions to the theory of microwave ferrite devices and microwave acoustics.
John Brown	For achievements in research and teaching of electrical and electronics engineering, especially in the fields of microwaves and electronic devices.
Robert L. Carrel	For contributions to antenna research and developments.
Akira Ishimaru	For contributions to the theory of antennas and wave propagation, and to electrical engineering education.
Edward M. T. Jones	For contributions in the analysis and development of radio frequency circuit components and radiation structures.
Irving Kaufman	For contributions to microwave electronics, and to education.
Herwig W. Kogelnik	For contributions to the understanding of the structure and coupling of modes in optical beams and resonators.
Ralph Levy	For contributions to the theory and design of transmission line networks.
Cornelis A. Muller	For contribution to the knowledge of the structure of galaxies.
Sogo Okamura	For contributions to microwave theory and techniques and to engineering education.
Eugene W. Sard	For contributions to the field of low-noise microwave millimeter wave, and infrared receivers.
Harold Seidel	For contributions to the field of active and passive microwave networks.
Harold Sobol	For contributions in the field of microwave techniques.
Edward A. Wolff	For contributions to antennas, geoscience instrumentation, and management of scientific projects.



One of the fellas —
Hal Sobol (with Bob Rivers)



DIRECTOR'S REPORT

Leo Young

Div. IV Director
Code 5200, Naval Res. Labs.
Washington, D.C. 20390

The last TAB* meeting was in connection with WESCON in Los Angeles in September. (The next one will be in Philadelphia in February.) I also attended the TAB OpCom† meetings in September and November, and the Board of Directors meetings in September and December.

Technical activities are the lifeblood of the Institute, and the Groups and Societies have continued to deliver services to their members, with excellent support from Dick Emberson and his headquarters staff. Of course, of great interest to all of us have been the developments on professionalism. The constitutional amendment adding a new "professional" purpose to the "scientific and educational" purpose was passed by the members (87-to-13). I believe we have made a relatively good start with the Washington office and professional activities, but we are still searching for the right organizational forms.

TAB and TAB OpCom have been concerned with supporting existing technical activities, fostering new ones, and with financial matters pertaining thereto. For example, one new option made available to any IEEE publication (Transactions or Conference publication) is the possibility of a mandatory page charge for excess pages. This might work as follows. A Group decides that it will charge an author's organization for all pages in excess of (say) six pages, unless there are good reasons to make an exception. Now suppose an author submits a paper dealing with a new measurement technique, and he also tabulates many of his measurements. The paper without the tables is less than six pages long, but the paper with the tables is eight pages long. The tables contain much useful measured information but are not essential to the paper. The tables are worth publishing, but would stretch the Group's page budget. The author's organization is willing to pay the cost of the extra two pages, and so the full paper is published.

How many noticed the article in *Science*, Vol. 177, p. 778 (1 September 1972) on the Fischer-Spassky chess championship games? According to *Science*, "the Russian medical literature [describes] an ailment known as asthenic syndrome. The symptoms include weakness, fatigability, depression, antisocial tendencies, sense of fear, impairment of memory and general mental function, and an inability to make decisions. The cause of asthenic syndrome is said to be low intensity microwave radiation. . . ." We now have an IEEE Committee on Man and Radiation (COMAR). The chairman is H. Mark Grove, Department of Microwave Research, Department of the Army, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, D.C. 20012. Anyone interested may contact Mark Grove.

TAB as well as TAB OpCom have spent considerable time discussing how to help Chapters. This topic is of much concern to IEEE, since certain benefits of IEEE membership can only be conferred by meetings. It is agreed that both TAB and RAB** must support Chapter activities, but it isn't always clear how. Of course the best way is through active and conscientious chapter officers.

IEEE student membership has dropped sharply as enrollment in U.S. universities and colleges is down. We should redouble our

*Technical Activities Board

†TAB Operating Committee

**Regional Activities Board

ADCOM PROFILE



Jesse J. Taub
New ADCOM Member

Mr. Taub received the B.E.E. degree from the College of the City of New York in 1948 and the M.E.E. degree from the Polytechnic Institute of Brooklyn in 1949.

Mr. Taub joined the AIL Division of Cutler-Hammer in 1955 and is presently a consultant in the Applied Electronics Division. He has worked on quasi-optical components for applications in the submillimeter wavelength range and directed the development of the first widely tunable millimeter-wave solid-state receiver. He also has been concerned with the development of a variety of MIC components and contributed to the theory of minimum loss microwave filters.

Prior to this work, he directed advanced development projects including a series of tunable parametric amplifiers, scanning receivers, a nuclear radiation meter using microwave techniques, and high-power multichannel rotary joints.

From 1949 to 1955, Mr. Taub was employed in the microwave tube section of the Naval Material Laboratory. He was active in the development of new measurement techniques for TR tubes and magnetrons. In 1951, he was made supervisor of the klystron and microwave semiconductor group. In this capacity, he directed investigation of mixer crystal burnout, balanced mixer design, and jitter in pulsed klystrons.

Mr. Taub has published over 45 papers in the microwave field. He is a Fellow of the Institute of Electrical and Electronic Engineers, a member of Sigma Xi, a member of the editorial board of the IEEE Transactions of Microwave Theory and Techniques, and has served on Government advisory committees concerned with semiconductor device development. Mr. Taub served on the NEREM Technical Program Committee, is a member of the IEEE Waveguides Standards Committee, Chairman of the Low Noise Receiver Technical Committee of the IEEE MTT Group, and has chaired microwave sessions at various symposia.

efforts to increase the percentage of students who join IEEE to make up for the reduced total college population. Perhaps a suitable financial incentive for Groups to recruit more student members should be worked out.

Financially, all the Groups in Division IV have at least held their own in 1972. This is partly due to lower-than-expected costs of publication and a good record of collecting voluntary page charges.

G-MTT, which started the "national lecturer" program, has been given a special allocation of \$2000 to make a slide and tape recording of a topical lecture, or series of lectures. It should allow a talk like that given by a national lecturer to reach a wider audience.

I wish all members of G-MTT a Happy New Year. Let's all work for a stronger Group and a better IEEE.

'73 INTERNATIONAL SYMPOSIUM PROGRAM SET

The technical program has now been completed for the 1973 IEEE G-MTT International Microwave Symposium to be held Monday through Wednesday, June 4-6, at the University of Colorado in Boulder.

The theme of the Symposium is "Microwave Applications in the '70s," and the keynote address will be delivered by John B. Horton, president of the G-MTT Administrative Committee.

In addition to the 14 technical sessions, Technical Program Committee Chairman Robert W. Beatty has planned panels on "Millimeter Wave Integrated Circuit Techniques," "Nonlinearities in Microwave Devices and Systems," and "Microwave Noise Measurements and Systems Affects." There will also be a workshop on the "Biological Effects of Microwave Radiation."

The technical session topics include:

- Millimeter and Submillimeter Wavelength Techniques
- Computer-Aided Microwave Practices
- Millimeter Wavelength Components
- Passive Solid-State Devices
- Microwave Delay Lines and Acoustic Devices
- Microwave Measurements
- Active Solid-State Devices
- Civil Microwave Systems
- Microwave Filters and Related Components
- Active Solid-State Devices (B)
- Microwave Techniques in Biological Research
- Waveguide Analytical Techniques
- Integrated Optics
- MIC Systems Components
- Biological Effects of Microwave Radiation

In addition to a stimulating technical program, enjoyable social activities and an entertaining ladies' program have been planned, according to David F. Wait, chairman of the symposium. A get-acquainted social hour and buffet dinner are planned for Sunday evening, June 3. The banquet Tuesday evening, June 5, will feature science humorist Ray Stanish discussing "Einstein, Relativity, and All That Jazz." Wednesday morning's technical sessions will be preceded by a mountaintop breakfast for symposium participants and their families.

In the mail now are advance programs listing all details of the technical program as well as information on transportation, housing, registration, and fees.

Persons desiring more information about the symposium may contact the Bureau of Conferences and Institutes, 217 Academy Building, University of Colorado, Boulder, Colorado 80302, phone (303) 443-2211, extension 6485.



RAY STANISH
Guest Speaker

NEW ADCOM SECRETARY



JAMES LAMAR ALLEN

Lamar Allen received the B.E.E., M.S.E.E. and Ph.D. degrees from the Georgia Institute of Technology in 1959, 1961 and 1966, respectively. He has engaged in research and teaching since 1959 and has held positions at Georgia Tech, Sperry Microwave Electronics and Colorado State University. Currently, Dr. Allen is an Associate Professor in the Electrical and Electronics Systems Department of the University of South Florida. His research has included work in the areas of antennas, ferrite devices, filters and transient response of distributed systems. He has 20 papers and publications in the above fields.

Dr. Allen joined IEEE as a student member in 1957. He has served as Treasurer of the Florida West Coast Section, as a member of several committees, and as a member of the 1972 and 1973 G-MTT Symposium Technical Program Committees. Currently, he is Secretary-Treasurer of G-MTT Administrative Committee.



DAVID F. WAIT
Symposium Chairman



ROBERT W. BEATTY
*Chairman, Technical
Program Committee*

LETTERS

Dear Editor:

After attending the 1972 Intercon, I wasn't quite sure, but; Microwaves are not dead, if the number of meetings this year having one or more microwave-related sessions is any indication. The attached list is incomplete — it even omits IEEE Intercon in New York, March 26-29, which has two microwave sessions — but even so, it is impressive.

In spite of all this apparently competing microwave activity, the annual G-MTT Symposium will not only be held as usual, but offers the largest technical program in G-MTT history, with 3 parallel sessions on two days, and 2 parallel sessions on one day. The program is particularly strong in the areas of mm waves, biological effects, and solid state devices. New this year are sessions on Integrated Optics and Civil Microwave Systems. Also for the first time at any Symposium, there will be a panel on Nonlinearities in Microwave Devices and Systems. Other panels include mm wave Integrated Circuit Techniques and Microwave Noise Measurements and System Effects. Winding up the Symposium is a Workshop on Biological Effects of Microwave Radiation.

The 1973 G-MTT Symposium offers a broad and solid Technical Program as well as exhibits. It will be a more than usually rewarding experience for the attendees this year.

1973 MICROWAVE MEETINGS

- | | |
|-----------------|---|
| February 14-16 | International Solid-State Circuits Conference (microwave session)
Philadelphia, Pennsylvania |
| April 10-13 | Conference on the Propagation of Radio Waves at Frequencies above 10 GHz
London, England |
| May 1-3 | 1973 IEEE Electron Device Techniques Conference
New York, New York |
| May 15-17 | Electrical and Electronic Measurement and Test Instrument Conference (EEMTIC)
Ottawa, Canada |
| June 4-6 | International Microwave Symposium
Boulder, Colorado |
| June 19-21 | Microwave '73
Brighton, England |
| August 14-16 | Microwave Semiconductor Devices, Circuits and Applications
Ithaca, New York |
| August 21-24 | 1973 International IEEE/G-AP Symposium and USNC/URSI Meeting RF & Microwave Fields (Relating to Biological Hazards)
Boulder, Colorado |
| September 4-7 | The Third European Conference on Microwaves
Brussels, Belgium |
| September 10-13 | 1973 Microwave Power Symposium (IMPI) (Biological Effects of Microwaves, Instrumentation, properties of Materials)
Loughboro Institute of Technology, Loughboro, England |
| October 23-25 | Radar-Present and Future
London, England |

Sincerely,

R. W. Beatty
Chairman, Technical Program Committee
1973 G-MTT International Symposium

OPINION

by A. Clavin

C3 versus C6

The changing of the IEEE Constitution is now a fact. This change was overwhelmingly decided by the membership of the IEEE, yet it poses new problems. These problems have to do with the changing of the tax status of the IEEE from a C3 (technical and education) to a C6 (pursuing advocacy). In order to carry out the lobbying activities desired by the membership, a C6 tax status will be required. Some groups and societies of the IEEE (especially the Computer Society) desire that all of TAB remain a C3 operation, dedicating themselves to strictly technical and educational activities, while the rest of the IEEE can advocate and lobby to whatever extent is desired.

I personally feel that to separate TAB from the rest of the IEEE in this matter would be wrong, as the strength of the Institute stems from this "body of knowledge" which is inherent in the groups and societies. The majority of the membership of the IEEE did not respond to joining the NSPE (National Society of Professional Engineers). They did not because of the lack of a technical base in the NSPE. For the IEEE to separate into two areas, claiming that professionalism does not need the technical base is wrong, for the technical is part of the professional.

I would like to urge all of our members who are concerned to express to our Division IV Director, Dr. Leo Young (Code 5200, Naval Research Labs, Washington, D.C., 20390) their feelings concerning the C3 and C6 status of TAB. The present plan is for the IEEE to form a separate C3 foundation which can accept and distribute charitable items. This activity should be sufficient to take care of all the C3 activities of the Institute.

The recent devaluation of the dollar confirms to many of the more technically minded the lack of research and development expansion in this country. Peoples of the world are not going to want U.S. goods at higher prices and of inferior quality when they can buy goods made by our economic competitors of Western Europe and Japan. Perhaps some type of tax incentive to industry for R&D spending is in order. I believe that this is one action item for the IEEE's Professional Activities Committee to undertake along with the portable pension plan.

Let's get behind the C6 status of the IEEE — become advocates.



CALL FOR PAPERS

**1973 INTERNATIONAL IEEE/G-AP SYMPOSIUM
AND USNC/URSI MEETING
AUGUST 21-24, 1973 - BOULDER, COLORADO**

The 1973 Main Meeting sponsored by the U. S. National Committee of URSI and the 1973 IEEE International Antennas and Propagation Symposium will be held jointly at the Engineering Center of the University of Colorado. URSI and IEEE/G-AP technical programs will be arranged separately except for the appropriate coordination.

Authors are invited to present (theoretical, experimental, and development) papers in their fields of interest related to the topics indicated below:

- Topics covered by URSI Commission
 - I. Radio Measurements and Standards
 - II. Radio and Non-Ionized Media
 - III. Ionospheric Radio
 - IV. Magnetospheric Radio
 - V. Radio and Radar Astronomy
 - VI. Radio Waves and Transmission of Information
 - VII. Radio Electronics

Topics covered by G-AP:

Antennas, scattering and diffraction, electromagnetic theory, guided and unguided propagation of radio waves, and allied fields of radio physics, such as plasmas.

Special topics recommended by joint Technical Program Committee:

- Measurement Techniques
- Radio Measurements at Low Temperatures
- RF and Microwave Fields Relating to Biological Hazards
- Geophysical Dielectrometry
- Passive E.M. Techniques in Remote Sensing
- Electromagnetic Waves in Solid-Earth Geophysics
- Sub-surface Communications
- Mine-rescue Techniques
- Undersea Communications
- Sea Scatter and Application to Oceanography
- Ionospheric Modification
- Ionosphere - Protonosphere Coupling
- Magnetosphere of Jupiter
- Instabilities in the Magnetosphere

Deadline for submission for all authors is May 28, 1973.

Material is to be sent to:

Dr. James R. Wait
Chairman, Technical Program Committee
URSI/IEEE G-AP Symposium
U.S. Department of Commerce
Boulder, Colorado 80302

**1973 IEEE INTERNATIONAL SYMPOSIUM ON
ELECTROMAGNETIC COMPATIBILITY TO BE
HELD JUNE 20 - 22, 1973 -
NEW YORK HILTON HOTEL, NEW YORK, N. Y.
"ONE WORLD, ONE SPECTRUM, POLLUTION-FREE"**


New York City has the honor of hosting the IEEE EMC Symposium on June 20, 21, 22, 1973.

Attendees are expected from many areas including: medical, engineering, universities, government, and the military. Additionally, since the symposium will follow right on the heels of the CISPR Conference, also to be held in New York City, June 11-19, 1973, we expect very good attendance by our colleagues from overseas.

The symposium theme is "One World, One Spectrum, Pollution-Free". Emphasis will be placed on the environmental impact of electromagnetic energy. Particularly, radiation hazards to personnel will be covered in depth. Also, for the first time, a full session will be devoted to the problem of electromagnetic pulse-EMP.

Exhibitors, from over 60 companies, are expected to display their state-of-the art wares in electromagnetic compatibility. Potential exhibitors are advised to reserve their booths early to assure choice locations. Companies wishing to participate but not exhibit, may do so as co-sponsors.

Third Class



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