IEEE SOCIETY ON MICROWAVE THEORY AND TECHNIQUES

NEWSLETTER

EDITOR: H. J. Kuno

Hughes Aircraft Co., 3100 W. Lomita Blvd., Torrance, California 90509

Number 89, Winter 1978

OUTGOING PRESIDENT'S MESSAGE

by Larry Whicker

As my term of office comes to a close, it is with some pride that I reflect on the accomplishments of the Microwave Theory and Techniques Society during the past year. The 1977 International Microwave Symposium at San Diego was an outstanding success. As has been mentioned earlier, this is the first MTT Symposium with a professionally managed exhibit. The combined attendance for the Symposium/Exhibit was over 1400. It has been an outstanding year for the MTT Transactions also. Eleven hundred pages have been published. These papers contained many outstanding articles. With the financial success of both the 1976 and 1977 Symposiums the MTT-Society has a good cash reserve and is able to consider new and expanded services for its membership.

In addition to the accomplishments during the past year, plans for the coming year are moving along. In 1978 our Symposium, for the first time, will be held outside the United States. The meeting will be in Ottawa, Canada. Additionally, the meeting will share registration with three other meetings. These include the CPEM Conference, the IMPI Meeting and a new meeting on Microwave Biological Effects which has been organized during the past few months. This meeting is jointly sponsored by IMPI, and the MTT-Society with support from the United States and Canadian URSI Committees. Attendees at all four meetings will be able to attend sessions in the other meetings. Common MTT, IMPI, and CPEM exhibits are planned also.

At our October two-day ADCOM meeting in Dallas, considerable time was spent on a long range plan for the MTT-Society. The first draft of the plan has been drawn up by Hal Sobol and other MTT-ADCOM Committee members. This plan attempts to answer the question "How can the MTT-Society better serve its membership and the Microwave Community.?" One area which I feel is important is in the area of sponsorship of specialists' conferences in addition to our annual general meeting. Good examples

(Continued on page 2)

1978/1979 MTT-S NATIONAL LECTURE

CHARLES A. LIECHTI

MICROWAVE FET's— WHAT NEXT?

Over the last decade, microwave GaAs FET's have made dramatic advances in low noise and efficient power amplification. These advances will be highlighted with emphasis on practical applications.

Looking further ahead, it is important to realize that GaAs technology holds the key to microwave monolithic-integrated circuits. Monolithic digital circuits with gigabit-per-second data rates, PSK modulators, wide-band amplifiers and complete receiver front-ends are beginning to emerge. These developments will have significant impact on microwave system capability and cost effectiveness in the next decade. "GaAs IC's: How do they work, why do we need them, what can they do, and where do we go from here?" These and related questions will be covered in the presentation.

The National Lecturer for the period of September 1978 to June 1979 may be scheduled by writing or calling:

CHARLES A. LIECHTI
Hewlett-Packard Laboratories
Solid State Laboratory
Palo Alto, CA 94304
(415) 856-3117

Charles Liechti received the Ph.D. degree in electrical engineering from the Swiss Federal Institute of Technology, Zurich, in 1967. He joined Hewlett-Packard Company in 1968. Since 1971, he has been responsible for the development of GaAs FET's, microwave amplifiers and GaAs digital IC's at HP's Corporate Solid-State Laboratory in Palo Alto, California.

Dr. Liechti received outstanding contributed paper awards at the International Solid-State Circuits Conference in 1973 and 1974. He also received the Microwave Prize jointly with R. Tillman for a paper on GaAs MESFET amplifiers in 1975.

MEET NEW MTT-S PRESIDENT

HAROLD SOBOL

Harold Sobol received the BSEE from CCNY and MSE and Ph.D. from the University of Michigan. He has worked on radar, missile guidance, superconducting devices, microwave tubes, plasmas, solid-state devices, microwave integrated circuits, and communication systems. He was with the University of Michigan's Willow Run and Electron Physics Laboratories from 1952-1959, IBM Watson Laboratory from 1960-62, and RCA from 1962-73. He joined Collins Radio, Dallas in 1973 and is currently Director of Product Development of the Collins Microwave Systems Division of Rockwell International.

Dr. Sobol was first elected to MTT Society Ad Com in 1972 and has served as Chairman of Technical Committees, Vice President, and was elected President for 1978. He served as General Chairman of 1974 Electronic Components Conference and of 1975 International Solid-State Circuits Conference. He has been a member of the Program Committees of the above and of the MTT Symposium since 1968. He was Vice-Program Chairman of 1973 IEEE Intercon.

Dr. Sobol was elected a Fellow of IEEE in 1972 and was IEEE Microwave National Lecturer in 1970. He was the recipient of an IR-100 award in 1969 for his work on microwave integrated circuits and received the Dallas IEEE section award for Outstanding Engineer of 1975.

NEW ADCOM MEMBER

REINHARD H. KNERR

Reinhard H. Knerr joined Bell Laboratories in 1968. He has been involved in R&D of circulators, microwave power amplifiers using Impatts, Bipolar Transistors and GaAsFET's. He studied linearization schemes for solid-state power amplifiers, developed low noise GaAsFET amplifiers and is now interested in satellite receivers.

In his academic career he received a BSEE from the Technical University Aachen, Germany (1960), Dipl. Ing. degree from École Nationale Supérieure d'Eléctrotéchnique, d'Eléctronique et d'Hydraulique de Toulouse, France (1962) and an MS (1964) and Ph.D (1968) degree from Lehigh University, Bethlehem, Pa. In 1963-1964 he was a NATO-scholar.

Dr. Knerr is a Senior Member of the IEEE, member of the Editorial Board of the Transaction on MTT, member of MTT-13 and chairman of MTT-6. He is presently guest editor of a special issue of the Transaction on MTT on Microwave and Millimeter Wave Integrated Circuits.

EDITOR'S NOTES

by H.J. Kuno

Having just completed editing this issue of the NEWSLETTER for the first time, I truly appreciate the great job Nat Pelner has done for the past three years. I would like to take this opportunity to express my appreciation in behalf of the ADCOM and the MTT-S to Nat for his service. I sincerely hope that I can keep up the quality Nat and his predecessors have built into the NEWSLETTER.

In order for me to carry out my responsibility as the Editor well, I do need your input (news items and opinions) and feedback. Let us use the NEWSLETTER as a forum to exchange different view points on a variety of subjects as well as to inform the MTT-S members on news items.

To start off, I would like to hear your opinions on two important subjects, viz., Transactions and Symposium. Should we have four parallel sessions in the future symposium as we did in 1977? What did you think of the exhibit run by the Horizon House? What is your opinion on workshops held with the Symposium? Do you have any suggestions for future workshops? Do you think that the Transactions cover enough application oriented papers? How about theoretical papers? Is the turn around time from manuscripts to publication short enough? Let's hear your suggestions and comments.

Don't hesitate to drop me a note or call me to tell me how I can do a better job as the Editor. I can make the NEWSLETTER only as good and interesting as you readers demand.

(Continued from front cover)

are the upcoming Biological Effects Meeting and the series of meetings on Submillimeter Wave Techniques. Additional areas need be addressed. The MTT-ADCOM is planning to devote considerable effort in this area during the coming year.

I would like to congratulate the newly elected officers and members of MTT-ADCOM. Hal Sobol, President, Don Parker, Vice President and Members, Steve Adam, Ken Button, Rinehard Knerr, John Kuno, and Barry Spielman. Harold Stinehelfer was not able to stand for re-election for personal reasons, but has promised to keep up some of his MTT Committee work.

For the MTT-Society this has been a busy year. It has been a year of growth and progress. We can look forward to new growth and progress under Hal Sobol's leadership.

LAWRENCE R. WHICKER
PRESIDENT, MTT-S

CHAPTER ACTIVITIES

by Dick Sparks

At this time of year the major planning effort within your chapter should be completed. Speakers for the remaining meetings should be identified and arrangements with respect to time, date and place should be in the finalization phase. If you have not contacted the National Lecturer, John Osepchuk, please check your 1977 MTT-S Committee Director and call him as soon as possible to arrange a meeting date. His topic of Microwave Radiation Hazards is quite timely and should have broad audience appeal to the general public as well as the engineering community.

I would be particularly interested in hearing from any Chapters that have one day seminars or lecture series planned for the winter or spring. The IEEE Short Course brochure can be helpful in planning tips and financial arrangements, and don't overlook the support that your local section officers can provide.

Keep in mind that chapter meetings, seminars, lecture series and symposia are all part of the continuing education responsibility that the IEEE MTT-S has toward its members. And of course there is an equivalent responsibility on the part of engineers to continually update themselves by taking advantage of the educational opportunities offered by the IEEE as well as formal college level courses at local universities. Some interesting reflections on continuing education are contained in the article below by Henry N. Oppenheimer, that appeared in the September 1977 IEEE Management Newsletter.

CONTINUING EDUCATION vs UNDERGRADUATE TRAINING – A FUNDAMENTAL DIFFERENCE

by
Henry N. Oppenheimer, President
The MGI Management Institute

Continuing education for professionals is not the same as undergraduate education. To the extent that this fundamental difference is recognized by those of us who provide continuing education experiences, such experiences will be successful and effective in achieving their objectives. To the extent it is not, we will have difficulties.

Perhaps the best way to point out this difference is to compare the two environments – the undergraduate and the continuing professional education.

The learning progress of the undergraduate is measured primarily by examination. Examinations are written not to meet the needs of the student but to meet the needs of the instructor which is to produce a distribution of grades for the class. An examination which produces 100%A's – even if such examination can be shown to be a valid measure of the student's learning –does not meet the *instructor's* needs, since his educational system forces him not only to distinguish between excellent, good, mediocre and bad students, but also to *force* such distinctions where they may not really exist. The entire system works only because the ultimate objective of the student is to attain that bachelor's degree, and he passively accepts the constraints imposed on him in the process.

By contrast, the continuing professional education student and, particularly, the student who is not pursuing a formal degree program, asks one question from the outset – "How can I use this in my job?" An effective continuing education experience answers that question for him in two ways. First, it focuses on the important useable concepts and eliminates unnecessary detail and historical data. Second, it structures exercises and examinations in such a way that the student is led to *success* rather than to failure. It measures the student's knowledge of concepts and his ability to apply the skills he is being taught, but it does so in a way that encourages success, helps him learn from any failure – most important of all – provides positive reinforcement for all success.

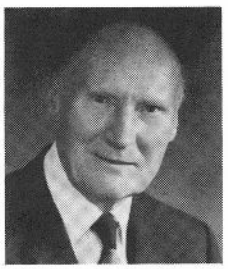
In structuring any adult educational experience in which you're involved, ask yourself these questions:

1. In this topic, what are the fundamental principles that will enable the successful individual to deal with real world situations.
2. Is all the material that we are presenting aimed at that objective? If any of it appears designed primarily to meet the instructor's needs – to demonstrate either his competence or his in-depth knowledge of the subject – it should be deleted.
3. Are the exercises and examinations that we use designed to help the student develop his skills in the subject area or are they designed merely to "catch" the student who is less than perfect?

In continuing professional education the student is the customer. His sole reward from participating lies in his improved job or personal performance. To the extent that we recognize that objective and help him attain it, our continuing education courses will be successful, accepted . . . . and work repeating.

A special issue of the PROCEEDINGS OF THE IEEE is planned for mid 1979 on the topic "Applications of electromagnetic theory in exploration geophysics". Those wishing to contribute should send 1000 word summaries, as soon as possible, to the guest editor, Dr. James R. Wait, ERL/NOAA, U.S. Dept. of Commerce, Boulder, CO 80302. The deadline for the first submission of the selected full papers will be 1 August 1978.

'77 AWARDS



MICROWAVE CAREER AWARD

DR. ERNST WEBER

"For more than 50 years of continuous contribution in the fields of microwave engineering, edcuation, and in engineering professional activities."

Dr. Ernst Weber, a member of the National Academy of Sciences and a founding member of the National Academy of Engineering, was born in Vienna, Austria, on September 6, 1901.

A dual interest in philosophy and engineering led him to pursue a double course of studies in his native city, attending both the Technical University of Vienna and the University of Vienna. Following receipt of the diploma in electrical engineering in 1924, he joined the Austrian Siemens-Schucket Company as research engineer. He was awarded the degree of Doctor of Science from the Technical University in Vienna in 1927. Concurrent with the work for his engineering degree he had studied philosophy, physics, and mathematics at the University of Vienna, and had received a Ph.D. from that institution in 1926.

Dr. Weber was transferred to the Siemens-Schucket Company in Berlin in 1929, and appointed Lecturer at the Technical University of Berlin.

In the fall of 1930 he was invited to be Visiting Professor at the Polytechnic Institute of Brooklyn. A year later he was named a permanent Research Professor of Electrical Engineering in charge of graduate study. From 1942 to 1945 he was professor of Graduate Electrical Engineering and head of graduate study and research in that field.

Early in World War II, Dr. Weber organized a microwave research group, out of which grew the Microwave Research Institute, forerunner of the present Department of Electrophysics. In recognition of the contributions of the research group, he was awarded the Presidential Certificate of Merit.

In 1945 Dr. Weber was appointed head of the Department of Electrical Engineering and director of the Microwave Research Institute. Under his direction, enrollment in electrical engineering grew to the point where it represented 38 per cent of the Institute total enrollment of 5500 graduate and undergraduate students in the nine fields of science and engineering at Polytechnic. The graduate program itself developed into one of the largest in the country.

When the vice presidency for research at the Polytechnic was created in 1957, Dr. Weber was named to that position. He was appointed President on December 20, 1957.

The creative work of Polytechnic's faculty and staff in the Microwave Research Institute led to the formation of a small, vigorous company responsible for the development and introduction of countless pieces of sophisticated microwave measuring instruments. Founded by Dr. Weber and his associates in 1944, the firm named Polytechnic Research and Development Company, Inc., came to be known as P.R.D. It was sold in 1959 to the Harris-Intertype Corporation and continues as a division of that firm i.e. PRD Electronics; the proceeds from the sale went to Polytechnic Institute of Brooklyn and were added to the then small endowment funds of the Polytechnic.

A pioneer in high frequency electronic research, Dr. Weber holds many American, Canadian and British patents in the field of microwave techniques. His published works include many scientific papers on electromagnetic fields, linear and non-linear circuits, and microwave measurements. He has contributed to several books and has published "Mapping of Fields" and "Linear Transient Analysis."

Dr. Weber is a Fellow, served as member of the board, as member of the executive committee and was president in 1959 of the Institute of Radio Engineers. He is a Fellow of IEEE and served as the first President in 1963. He is a Fellow of the American Physical Society, and honorary member of the Institute of Electrical Engineers of Japan and of the Institute of Radio Engineers of Japan.

Dr. Weber was a member and consultant of the Army Scientific Advisory Panel, a member of the Advisory group to the Army Electronics Command, and a member of the New York Gov. Nelson Rockefeller's Advisory Council for the Advancement of Industrial Research and Development. He served on the Defense Science Board from 1963 through 1966.

He holds honorary doctorates from Newark College of Engineering, Pratt Institute, Brooklyn Law School, Long Island University, the University of Michigan and Polytechnic Institute of Brooklyn.

He retired as President of Polytechnic on June 30, 1969 when he was elected Professor Emeritus and President Emeritus. He served as chairman of the Engineering Division of the National Research Council, National Academy of Sciences in Washington, D.C., from 1969 to 1974 and is now a member of the Commission on Sociotechnical Systems of the National Research Council; having served as its acting Executive Director from November 1, 1974 to June 1, 1976.

IRE/IEEE ACTIVITIES

Member Board of Directors 1952-1962, President 1959, Vice President 1962.

Professional Groups Committee

Member 1951-1960, Vice Chairman 1954-1956

Eastern Division Vice Chairman 1957-1959, Chairman 1960-1962

Standard Committee

Member 1949-1960, Vice Chairman 1951-1954, Chairman 1954-1956, Exofficio 1957-1959.

Professional Groups

MTT member since beginning – (life member IEEE)

Antennas and Propagation, member soon after beginning (life member IEEE)

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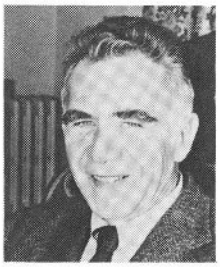
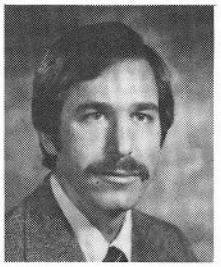
MICROWAVE PRIZE

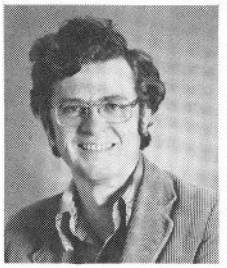
For paper "Power Amplification of Microwave FM Communication Signals Using a Phase Locked Voltage Tuned Oscillator," published in the IEEE Trans. on Microwave Theory and Techniques, Vol. MTT-24, pp. 393-404, July 1976.



MARION E. HINES



RONALD S. POSNER



ALLEN A. SWEET

Marion E. Hines was born on November 30, 1918 in Bellingham, Washington. He received a B.S. degree in Applied Physics in 1940 from the California Institute of Technology. He joined the U.S. Army Air Force in 1940 and served as a weather officer throughout the war. He returned to Cal Tech and received an M.S. in Electrical Engineering in 1946. Further part-time graduate study in Physics was done in 1947-1948 at Columbia Unviversity.

From 1946 to 1960 he was a member of the Technical Staff at Bell Telephone Laboratories. Until 1956 he worked with traveling-wave tubes, microwave triodes and digital storage tubes, making contributions to beam focusing, amplification theory, and practical tube development. In 1956 his interest shifted to semiconductor devices. In 1957 (with H.E. Elder) he demonstrated the first negative-resistance varactor parametric amplifier. In 1960 he published an important paper on the microwave properties of tunnel diodes.

In 1960 he joined Microwave Associates, Inc. In the period to 1963, he and his co-workers established many of the fundamental principals of varactor harmonic generation and developed numerous practical microwave power sources using this principle. This led to the introduction of all-solid-state microwave communications sytems by Microwave Associates in the mid 60's. In 1964 he published a fundamental paper on microwave power control using PIN and other diodes. This led to the development of practical pulsed megawatt duplexers, multi-kilowatt phase shifters and power switches, now extensively used for RADAR.

From 1965 to 1974 he concentrated on IMPATT and Gunn-effect diodes, making important contributions to a quantitative understanding of their electron dynamics and to their application as microwave oscillators and amplifiers. These include the small-signal impedance theory (1966); small signal noise theory (1966); nonlinear effects in oscillators and power amplifiers (1970); and large signal nose, instabilities and intermodulation (1972).

In the mid 70's, serving as Vice President and Corporate Technical Director, he has diversified somewhat, having published papers on Ferrite devices, on new methods of microwave power amplification, and on computer science and automatic microwave measurements. At present he is studying improved techniques for microwave diode frequency conversion.

Mr. Hines has contributed more than 50 technical papers and oral presentations. He holds about 40 patents. He received a "Best Paper" award from ISSCC in 1967, the S-MTT "Microwave Prize" in 1972, and was made a fellow of the IEEE in 1968. In 1976 he received the J.J. Ebers Award from the IEEE Electron Devices Group. He has served on numerous technical committees and editorial boards for the IEEE.

Ronald S. Posner was born in Los Angeles, California on February 22, 1943.

He received his B.S. degree in Engineering from the University of California at Los Angeles in June, 1964.

After continuing his education for a year, he joined Rantec Corporation. His responsibilities included the development of microwave components for broadband automatic impedance measurement systems, and the development of circulators and ferrite phase shifters. He received his M.S. degree in Engineering in January, 1966, from the University of California, Los Angeles, specializing in electromagnetics.

Awarded a NASA Fellowship, he returned to the University of California, Los Angeles, where his studies and research continued in the area of solid-state electronics, Quantum mechanics and applied mathematics. He received his Ph.D. in Engineering in June, 1970. His dissertation concerned current crowding in bipolar transistors.

In September, 1970, he joined the Micro State operation of the Raytheon Company. At Micro State, he developed high-power avalanche diodes and avalanche diode amplifiers for use in microwave radios and transmitters.

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Instruments and Measurements 1948-1952, Chairman 1949-1951

National Convention, Chairman Technical Program Committee 1947 and 1951

Education Committee, member 1944-1951.

URSI, member US National Committee, 1954 to present

Representative of IRE, IEEE since 1956

In September, 1972, Dr. Posner, became a member of Microwave Associates, Inc. At Microwave Associates, Inc. he has spear headed the development of commercial microwave sources, sensors, and telecommunications local oscillators. Currently he is Product Manager for Commercial Microwave Products, where he has been active in the creation of a commercial microwave communications technology.

Dr. Posner graduated with Honors, received the faculty-friends prize for his senior engineering design project (a restartable solid propellent rocket engine with the capability of controlled thrust termination and restart), and was awarded the faculty-alumni award for outstanding academic achievement by a Ph.D. candidate in Engineering. Dr. Posner is a member of Tau Beta Pi.

Allen A. Sweet was born in Providence, Rhode Island on July 5, 1943. He received a BSEE from Worcester Polytechnic Institute in 1966. Cornell University awarded him an MS in 1968 and the Ph.D. in 1970.

From 1969 to 1971 Dr. Sweet was a Senior Research Engineer with the Monsanto Co. At Monsanto his work concerned the electrical characterization of Gunn Effect Devices, with special emphasis on noise.

From 1971 to 1975 Dr. Sweet was employed by Microwave Associates as a group leader in charge of communications sources. During this period he developed many kinds of Gunn sources including the first commercially available cavity stabilized Gunn source for telecommunications.

In 1975 Dr. Sweet joined Varian Associates in Palo Alto, California where he developed a line of GaAs Fet Amplifiers and the processing laboratory necessary for their construction.

In 1977 he joined Wakins-Johnson as section head in charge of communications amplifiers. His present work concerns the development of a line of cooled and uncooled GaAs amplifiers for communications systems.

Dr. Sweet is a member of the IEEE. He has published over twenty technical papers, many of them in the area of oscillator noise.

SIXTH IRANIAN CONFERENCE ON ELECTRICAL ENGINEERING IS PLANNED IN PAULAVI UNIVERSITY, SHIRAZ, IRAN FOR MARCH 12-15, 1979.

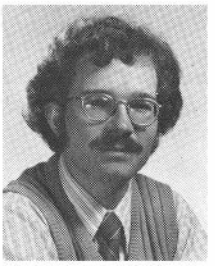
Papers are solicited in the following areas:

* MICROWAVE DEVICES AND CIRCUITS
* MICROWAVE RADIATION AND TRANSMISSION
* POWER SYSTEMS ANALYSIS
* NEW TRENDS IN CONTROL SYSTEMS
* DIGITAL SIGNAL PROCESSING

Prospective authors should submit abstracts not exceeding 200 words. These should be typed in triplicate and received by the 6th I.C.E.E. Secretariat not later than 1st March, 1978.

All correspondence should be addressed to:

Dr. M. Rafian
6th I.C.E.E.
P.O. Box 737
SHIRAZ, IRAN



MICROWAVE APPLICATION AWARD

STEPHEN I. LONG

For "The study of InP Materials, Devices and Circuits for Applications to Millimeter-Wave Gunn Diode Devices."

Stephen I. Long was born in Alameda, California on January 11, 1946. He received the B.S. degree in engineering physics from the University of California, Berkeley in 1967 and the M.S. and Ph.D. degrees in electrical engineering from Cornell University, Ithaca, N.Y. in 1969 and 1974 respectively. His thesis research dealt with steady state liquid phase epitaxial growth of GaAs.

During 1966 and 1967, he was a staff assistant at Stanford Linear Accelerator Center and investigated electron multiplication effects in alkali halides. During 1968 and 1969, he helped to develop GaAs liquid phase epitaxial growth systems at Cayuga Associates, Ithaca, N.Y. for transferred electron device fabrication. From 1969 to 1973, he served as a project engineer at the Rome Air Development Center, Griffiss AFB, N.Y. where he investigated and developed a steady state LPE growth technique for thick, uniformly doped layers. In 1974, he joined Varian Associates, Palo Alto, California where he has worked on vapor phase epitaxial growth of GaAs and Inp, development of GaAs high efficiency IMPATT devices and millmeter wave InP oscillator and amplifier devices. He is presently manager of the semiconductor engineering group, solid state west division.

Dr. Long is a member of IEEE, Tau Beta Pi, and the Northern California Crystal Growers.

Steve wishes to share the honor with his collegues by acknowledging their key contributions to the development of InP devices: They are R.D. Fairman for InP epitaxial material growth; R.J. Hamilton, Jr. for circuit design and device evaluation; J.T. Andrews for device evaluation; and F.B. Fank for his leadership, encouragement, and support.

HIGHLIGHTS ADCOM MEETING OCTOBER 20 & 21, 1977 DALLAS, TEXAS

by H. Sobol

The October AdCom meeting was held at the Fairmont Hotel in Dallas. The AdCom Committee joined the Organizing Committee of the proposed 1982 Symposium for a tour of a possible hotel site, the new Regency Hyatt House. The proposal for the 1982 Conference will be submitted at the 1978 Symposium in Ottawa. The official meeting commenced at 8:00 p.m. Highlights of the meeting included elections and the presentation of the MTT Long Range Plan. Also, a decision was made to provide all MTT members with a 25-year cumulative index of MTT Transactions papers.

President's Remarks – Larry Whicker

The International Microwave Power Institute (IMPI) will run a meeting in Ottawa in conjunction with our Symposium. John Osepchuk will serve as the Chairman of this meeting and C. C. Johnson will be the Technical Program Chairman. The meeting will be devoted to bio-effects of microwave radiation. Special arrangements for joint registration at the meetings will be made and IMPI and MTT will split the profits of this meeting. IMPI and MTT will also publish the proceedings. The charter of the Quantum Electronic Applications Group (QEA) was approved by TAB. This new group is the outgrowth of the former Quantum Electronics Council. The MTT representatives on the AdCom of the new group include Ken Button, Dean Anderson, Paul Coleman, and Bill Chang. The group publication will continue to use the former title, The Quantum Electronics Journal. Larry reported on the subject of engineering registration which received considerable discussion at the TAB meeting and MTT-AdCom voted to support a computer society statement which encourages investigation of various alternatives to engineering registration. This vote is contrary to USAB proposal which encourages registration for all engineers at this time. Larry also reported that the MTT logo is now a registered trademark.

Standards – Steve Adam

Steve reported that the Bureau of Standards has withdrawn support of the IEC, an international standard-setting committee. MTT will write a letter to Senators Magnuson and Brooke opposing this decision since the result can be detrimental to foreign trade in the microwave industry. MTT-6 has requested that the Standards Committee investigate standards for MIC substrates.

Technical Committees – John Horton

John reported on several reorganizations in the Technical Committees. Dean Hodges of Aerospace Corporation will be replacing Ken Button as Chairman of Technical Committee MTT-4 on sub-millimeter waves, and Bob Hicks will be assuming the Chairmanship of Technical Committee MTT-16 on systems. The Technical Committees are preparing information for use in the January Technology issue of Spectrum. MTT will no longer participate in the EEIC because of poor audience turnout. MTT-6 is planning to sponsor a workshop on FETs versus mixers at the 1978 Symposium.

Long Range Planning – Ted Saad

The Long Range Plan Committee included Warren Cooper, Pete Rodrigue, Al Clavin, and the author. A significant feature of the Plan is the formation of the AdCom position with responsibility for identifying and starting activity in new fields. A more active technical committee organization will be encouraged. Each technical committee chairman will be responsible for an annual review of his technical committee activities. The review will be published in the Newsletter. Considerable discussion was held on the method of selecting symposium sites and the extent of the proposals required. This area is particularly important today since lead time for hotels that are capable of holding both our symposium and the exhibits is five to seven years. In the future, letter proposals will be submitted at an early date. A bylaw change will be prepared to permit this change. MTT will continue the standards activities.

AdCom members will be assigned to work with chapters in their geographic area. This will serve to couple AdCom to the memberships as well as providing help to the weaker chapters. The discussion on the Long Range Plan will be continued at the next AdCom meeting and at that time, a full report will be included in the Newsletter.

Chapter Activities

N. Pelner, retiring editor of the Newsletter was officially thanked by AdCom for doing an excellent job. John Kuno will be the new editor.

Transactions – Lamar Allen

A special issue on solid state microwave and millimeter power generation was approved. The editors will be John Kuno and Bert Berson. A thirteenth issue of the Transactions will be published at no cost to the members in 1978. This issue will be our twenty-five year cumulative index. The issue will be published at no cost to members and will be supported by our surplus. The budget for technical papers in the coming year is 1100 pages. We are receiving 20 manuscripts per month.

Operations – Warren Cooper

A by-laws change will be prepared to change the form of the Symposium proposals. Warren Cooper presented an outstanding slate of nominees for the various AdCom positions. The members elected to three-year terms were Steve Adam, Ken Button, Rhinehard Knerr, John Kuno, Barry Spielman, and Hal Sobol. H. Sobol was elected President, Don Parker, Vice President. Congratulations to all elected.

Awards – Pete Rodrique

AdCom voted on three major awards for 1977. The winners were Ernst Weber for the Microwave Career Award; Steven Long for the Microwave Applications Award; and M. Hines, R. Posner, and A. Sweet for the Microwave Prize. The awards are described elsewhere in the Newsletter. Congratulations to all elected.

The next AdCom meeting will be held February 21 in Ottawa. The meeting was adjourned at 2:35 p.m., October 21st.

History of MTT

by Ted Saad

ADCOM IV July 1, 1955 through June 30, 1956

Administrative Committee:

A. C. Beck, Chairman
H. F. Engelmann, Vice-Chairman
K. Tomiyasu/S. D. Robertson, Secretary-Treasurer

R. E. Beam
C. W. Chandler
S. B. Cohn
A. J. Clavier
Henry Jasik
D. D. King
W. W. Mumford
A. A. Oliner
W. L. Pritchard
T. S. Saad
Harold Schutz
L. D. Smullin
G. C. Southworth
H. A. Wheeler
J. R. Whinnery

The Chairman of the fourth Adcom was A. C. Beck, the Vice-Chairman was H. F. Engelmann. K. Tomiyasu started out as the Secretary-Treasurer but due to a move to California, he was replaced by Sloane D. Robertson. The Adcom now numbered 18 people. Group membership in August of that year was 1,849 paid, 63 students and 214 unpaid members.

A request was made of the group to co-sponsor for "publicity and publication purposes" a Symposium on the application of ferrite devices on microwaves to be held at Harvard on April 2, 3, and 4, 1956. The Symposium was organized by Dr. C. L. Hogan, who was an associate professor of applied science at Harvard and it was intended that the meeting be sponsored by Harvard and the Air Force Cambridge Research Center. The group agreed to co-sponsor, but was careful in phrasing it's willingness to publish "subject to editorial review".

In November of 1955, it was moved to sponsor the first P-GMTT session during the 1956 IRE convention. Some discussions were held as to whether the contents of the convention records and the Proceedings of the IRE be included in selecting the first microwave award. The group decided to limit the first award to papers published in the Transactions. Subsequently, the award (the first Microwave Prize) went to Messrs. Herman N. Chait, and Nicholas G. Sakiotis, for their paper published in the November 1953 P-GMTT Transactions entitled "Properties of Ferrites in Waveguides". The basis for the award was as follows: "the first published description of a method of using ferrite plates and rectangular waveguides in contrast with earlier method calling for circular waveguides". It was arranged for the award to be made at the banquet of the Harvard Ferrite Symposium.

During that year, the Philadelphia Symposium was held in the early part of February about two months before the Harvard Symposium. Both of them were successful both as to technical content and attendance. Although there was some concern over a possible conflict between the two symposia, the concern proved to be groundless.

During that period, there was great concern trying to find suitable papers for the Transactions and Proceedings. The thought was often expressed that potential authors, because of proprietary interests or military security, might never submit papers for publication. Time has demonstrated that those early fears were unwarranted. Towards the end of this Adcom term, Robert Wengenroth became the new Newsletter editor.

On March 31, the paid membership had climbed to 2,335, with students at 130 and 189 unpaid. P-GMTT at the time, was the sixth largest group in the IRE. In addition, there were 11 active chapters with a twelfth chapter in the New York section having been approved by the section and the group and awaiting official approval by the IRE executive committee. It was later approved.

1978 FUSE SECTION MEETING "STATUS AND TRENDS OF FUSING"

The Annual Meeting of the Fuse Section of the American Defense Preparedness Association will be held March 15 and 16, 1978 at the Naval Amphibious Base, Norfolk, Va.

For information please contact

R. W. Strauss
Stewart-Warner Corp.
425 - 13th Street, N.W., Suite 552
Washington, D.C. 20004

NEM 1978

The 1978 Nuclear EMP (electromagnetic pulse) Meeting (NEM 1978) sponsored by the IEEE Albuquerque Chapter Joint AP-S, S-MTT, G-EMC, and the Dept. of Electrical Engineering and Computer Science of the U. of New Mexico, will be held at the U. of New Mexico campus on the dates:

6-8 JUNE 1978

This, like the one in 1973, will cover the broad spectrum of nuclear EMP related optics, including an assessment of the state of the art (theory and applications), as well as a look into the future, including SGEMP, in and out of source region.

Unclassified papers are solicited describing original work, not published or presented previously, which can be analytical, numerical, experimental and/or applications oriented.

Authors are requested to submit a one page abstract, original plus five copies, by February 15, 1978 to:

B. K. SINGARAJU
AFWL/DYC
KIRTLAND AIR FORCE BASE
ALBUQUERQUE, NM 87117

CALL FOR PAPERS

SPECIAL ISSUE ON SOLID STATE MICROWAVE/MILLIMETER-WAVE POWER GENERATION, AMPLIFICATION, AND MODULATION

The IEEE Transactions on Microwave Theory and Techniques is planning to publish a Special Issue on Solid State Microwave/Millimeter-Wave Power Generation, Amplification, and Modulation in May 1979. Papers are solicited that describe new and significant aspects of research, development, design, or application in the following (but not limited to) areas:

- IMPATT, Gunn, TRAPATT, and BARITT Oscillator and Amplifiers
- GaAs and Silicon FET Amplifiers and Oscillators
- Power Combiners/Amplifiers
- Packaging Techniques/Internal Matching
- Linearity Considerations and Measurement
- Large- and Small-Signal Noise Measurement and Reduction
- Pulsed and CW Device Characterization
- Frequency Converters and Multipliers
- Frequency, Phase and Amplitude Modulators and Switches

The deadline for submission of manuscripts is April 30, 1978. The length of each manuscript must be limited to within 15 double-spaced type-written 8-½ x 11 inch pages plus less than 10 figures. Authors are requested to first indicate their intention to submit a paper as soon as possible but not later than March 1, 1978. Five (5) copies of each manuscript must be sent to either of the guest co-editors:

DR. H. J. Kuno
Hughes Aircraft Company
3100 West Lomita Boulevard
Torrance, California 90509
(213) 534–2121

or

Bert Berson
Hewlett Packard Company
1501 Page Mill Road
Palo Alto, California 94304
(415) 493–1501

IEEE Transactions on Microwave Theory and Techniques
Special Issue on Solid State Microwave/Millimeter-Wave Generation,
Amplification, and Modulation.

BYLAWS

It is the custom from time to time, to publish MTT-S Bylaws in the Newsletter in order to keep the Membership up-to-date on the principles governing the day to day operation of MTT-S. The Bylaws cover Nominations, Elections, Transactions policy, Committees, Membership, Awards, Symposia planning and sites, budgets and other subjects affecting all MTT-S members. It is hoped that each of you will take a few minutes to become more familiar with the Bylaws and to express any constructive views to your Chapter Chairperson or to any Administrative Committee member.

BYLAWS

IEEE MICROWAVE THEORY AND TECHNIQUES SOCIETY

SECTION I – NOMINATIONS, ELECTIONS AND APPOINTMENTS

A. NOMINATIONS

1. NOMINATIONS SUBCOMMITTEE

On or before February 1 of each year, the President of the Administrative Committee shall ascertain that a Nominations Subcommittee has been appointed in accordance with Section IIIA of these Bylaws, which shall consist of a Chairman and four or more members of the Society not more than half of whom may be members of the Administrative Committee.

2. MEMBERSHIP NOMINATIONS

Each year, before the annual meeting of the Administrative Committee, the Nominations Subcommittee shall select a slate of at least two members of the Society for each vacancy in the elected membership which will occur on the Administrative Committee on the following JANUARY 1; shall ascertain that they will accept the nomination; and shall transmit the names of the accepting nominees to the President of the Administrative Committee. In addition, the Chairman of the Nominations Subcommittee shall cause to be published and distributed to the entire Society membership a call for nominations. Nominations by petitions signed by 25 members of the Society will also be received by the Administrative Committee on or before the annual meeting. The Administrative Committee may make additional nominations.

The Nominations Subcommittee, in its nominations, and the Administrative Committee, in its elections, shall be guided in their selections by principles of efficiency, geographical, and organizational distribution.

3. DIVISIONAL DIRECTOR

Every two years, for purposes of election to office commencing on even years, the Nomination Subcommittee shall select a slate of at least two Senior Members or Fellows from the Society as candidates for Divisional Director; shall ascertain that they accept the nomination; and shall transmit the names of the accepting nominees to the President of the Administrative Committee.

4. OTHER IEEE NOMINATIONS

The Nominations Subcommittee shall recommend to the President of the Administrative Committee nominations required to fill certain IEEE positions or recommendations to the nominating committee to the TAB.

B. ELECTIONS

1. MEMBERSHIP

The Administrative Committee shall hold an annual meeting each year during the month of September. At the annual meeting, the Administrative Committee shall hold elections to fill vacancies in the Administrative Committee to occur on the succeeding JANUARY 1. A plurality of all elected members of the Administrative Committee not presently eligible for re-election shall elect, provided that these holdover members present constitute a quorum. The Administrative Committee may make contingent elections to be effective in case an elected member fails to accept the office, or a disapproval is received from Headquarters. The names of the elected members shall be transmitted to the Chairman of the Technical Activities Board. Unless disapproval of such elected members is received within 60 days of each transmittal, the elections shall become final.

Each eligible holdover member shall submit a ballot listing their choice for filling the six elective positions. The votes shall be counted by a teller's committee appointed by the President of the Administrative Committee, no member of which is either eligible to vote or a candidate for election. All votes shall carry equal weight. Any candidate receiving a plurality on the first ballot is elected. Additional ballots shall be held, listing as candidates those nominees who have not received a plurality of votes. Candidates who have received less than two votes may be removed from consideration by the teller's committee if sufficient candidates remain to fill the remaining vacancies. This process shall continue until all six vacancies are filled. In the event that two successive ballots do not result in the filling of a vacancy nor the reduction in the number of nominees under consideration, the holdover members of the Administrative Committee may elect to remove from the ballot candidates having the fewest number of votes on the previous ballot, and provided that all candidates having received that number of votes are removed from the ballot.

2. PRESIDENT AND VICE-PRESIDENT

At its annual meeting, the Administrative Committee shall elect as its President one of the Elected Members of the following year's Administrative Committee for the year beginning on the succeeding JANUARY 1; and shall elect as its Vice-President one of the Elected Members of the following year's Administrative Committee for the year beginning on the succeeding JANUARY 1.

3. HONORARY LIFE MEMBER

Nomination for Honorary Life Member of the Society may be made by any member of the Administrative Committee, or by a petition signed by at least 50 members of the Society. A two-thirds affirmative vote by all of the Elected Members of the Administrative Committee will be required to elect an Honorary Life Member. In the absence of a sufficient number of Elected Members of the Administrative Committee at a regular meeting, election of Honorary Life Member may be conducted by mail ballot.

(a) Eligibility

The position of Honorary Life Member may be bestowed upon an outstanding member of the profession who fulfills the following minimum requirements:

(1) The candidate shall have made significant technical contributions in the field of interest of the Society.

(2) The candidate shall have performed outstanding service to the profession and to the IEEE.

(3) The candidate shall have been a member of the Society for at least five years.

(4) The candidate shall have been an Elected Member of the Administrative Committee.

(b) Payment of Fees

Society fees for Honorary Life Members shall be paid from the Society Treasury. The Secretary shall arrange for this with IEEE Headquarters.

C. APPOINTMENTS

1. SECRETARY

The President Elect, upon receiving notice of election as President, shall submit to the Administrative Committee the name of a proposed Secretary, who shall be a member of the Society, but need not be a member of the Administrative Committee for appointment. If a majority of the members of said Administrative Committee do not object within 30 days of oral or written announcement to the Administrative Committee, the appointment shall become final. If a majority of the members of said Administrative Committee object, a new name(s) must be submitted. The incumbent Secreatary shall remain in office until a successor is appointed and arranges to take over the office.

SECTION II – ADMINISTRATIVE COMMITTEE MEMBERSHIP

A. ELECTED MEMBER

An Elected Member of the Administrative Committee is a member of the Society elected in accordance with Article VI, Sections 1 and 2, and Article VII, Sections 1 and 2, of the Constitution. An Elected Member has full rights and voting privileges on all matters before the Administrative Committee, as defined in the Constitution and these Bylaws.

B. EX-OFFICIO MEMBER

An Ex-Officio Member shall serve on the Administrative Committee as provided for by these Bylaws. An Ex-Officio Member of the Administrative Committee has all discussion and voting privileges on all matters before the Administrative Committee, except that no vote may be cast to elect members to the Administrative Committee nor to elect the President nor Vice-President of the Administrative Committee. An Ex-Officio Member is not included in a quorum count. An Ex-Officio Member may serve on standing and Ad Hoc Committees.

C. HONORARY LIFE MEMBER

An Honorary Life Member of the Society has all of the rights of an Ex-Officio Member of the Administrative Committee.

D. PAST PRESIDENT

Past Presidents shall be Ex-Officio Holdover Members and have the full rights and voting privileges of Elected Members of the Administrative Committee for three years following their term of office as President of the Administrative Committee, provided that membership in good standing is maintained with the Society. Any remaining years of a Past President's elective term on the Administrative Committee will be vacated, and a Past President will be ineligible for re-election to the Administrative Committee for this three year period. The Past President's vacated Elected Member seat will be filled in accordance with Article VII, Section 3, of the Constitution. Election of a member to fill this forthcoming vacancy shall take place during that meeting of the Administrative Committee at which the annual election of members for the coming year is held.

E. TRANSACTIONS EDITOR

The TRANSACTIONS Editor, if not an Elected Member of the Administrative Committee, shall be an Ex-Officio Member of the Administrative Committee during the tenure of that office and for a period to terminate on a December 31st ranging from at least one to less than two years thereafter. The TRANSACTIONS Editor shall be a member of the Society.

F. NON-VOTING MEMBER

A Non-Voting Member of the Administrative Committee may participate in discussions of all matters before the Administrative Committee but does not have a vote on any Administrative Committee business. Non-Voting Members shall receive notification of meetings and copies of the minutes of meetings. Non-Voting Members may serve on standing or Ad Hoc committees.

G. SECRETARY

The Secretary, if not an Elected Member or Ex-Officio Member of the Administrative Committee, shall be a Non-Voting Member of the Administrative Committee during the tenure of that office. The Secretary shall be a Member of the Society.

H. CHAIRMAN OF A STANDING COMMITTEE

The Chairman of a Standing Committee shall be a Non-Voting Member of the Administrative Committee unless such Chairman is an Elected or Ex-Officio Member of the Administrative Committee.

I. CHAPTER CHAIRMAN

The Chairman of a Chapter of the Society shall be a Non-Voting Member of the Administrative Committee, unless such Chairman is an Elected Member or Ex-Officio Member of the Administrative Committee.

J. CHAIRMAN OF AN AD HOC COMMITTEE

The Chairman of an Ad Hoc Committee shall be a Non-Voting Member of the Administrative Committee for the duration of the Ad Hoc Committee, unless such Chairman is an Elected Member or Ex-Officio Member of the Administrative Committee.

K. CHAIRMAN OF QUANTUM ELECTRONICS COUNCIL

The Chairman of the IEEE Quantum Electronics Council, if he is not a member of the Administrative Committee, shall be a Non-Voting Member of the Administrative Committee during his tenure of that office.

L. CHAIRMAN OF THE SOLID-STATE CIRCUITS COUNCIL

The Chairman of the IEEE Solid-State Circuits Council, if he is not a member of the Administrative Committee, shall be a Non-Voting member of the Administrative Committee during the tenure of that office.

M. REPRESENTATIVE TO IEEE HEADQUARTERS, TAB

The Representative(s) to IEEE Headquarters, TAB and/or Division 4, if not a member of the Administrative Committee, shall be a Non-Voting Member of the Administrative Committee during the tenure of that office.

N. ADVISORY COMMITTEE

A member of the Advisory Committee, if not an Ex-Officio Member, shall be a Non-Voting Member of the Administrative Committee.

SECTION III – COMMITTEES

A. STANDING COMMITTEE

The following Standing Committees shall be appointed by the President as soon as possible after election as President and such committees shall hold office for one year co-extensive with the term of office of the President except as otherwise noted in these Bylaws. It will be discretionary with the Administrative Committee President to appoint any part or all of any Standing Committee, or to appoint the Chairman only of each committee and request the latter to appoint additional committee members.

1. MEETINGS AND SYMPSOIUM COMMITTEE

The Meetings and Symposium Committee shall, as required, assist the respective program committees in planning and selecting programs within the field of interest of the Society for the technical conferences of the Institute and Society. Upon instruction of the Administrative Committee, the Meetings and Symposium Committee also cooperates with the committees responsible for other meetings, conventions, and symposia.

The Meetings and Symposium Committee Chairman shall take office immediately upon appointment and shall continue for one year, plus such time as is necessary to bring to a termination all activities in connection with any meetings managed by said committees. Such an extension of the term of a Meetings and Symposium Committee for the completion of a given task shall not preclude the appointment of a new committee at the designated time for the succeeding year.

2. PUBLICATIONS COMMITTEE

The Publications Committee shall be responsible for publications and dissemination of technical information of interest to the Society. The Committee shall be responsible for publishing the TRANSACTIONS and for notifying the technical community of meetings, special publications, and other information of interest to the Society.

(a) TRANSACTIONS Editor

The TRANSACTIONS Editor is responsible for the technical editorial content of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES. The editor is also responsible for coordination with the IEEE facilities for publication. The TRANSACTIONS Editor shall appoint and be Chairman of the Transactions Editorial Board. The TRANSACTIONS Editor will continue to serve until such time as a successor is named by the President of the Administrative Committee, and for such time thereafter as may be necessary for a successor to assume the duties of Editor.

(b) Associate Editor of the TRANSACTIONS

An Associate Editor of the TRANSACTIONS shall carry out the duties assigned by the TRANSACTIONS Editor.

3. SCOLARSHIPS COMMITTEE

The Scholarships Committee shall be responsible for instituting and administering education-aid programs to be wholly or partially sponsored by the Society.

4. OPERATIONS COMMITTEE

The Operations Committee shall be responsible for the operational conduct and advisory administration of the Society and the Administrative Committee. It shall be responsible for maintaining the Constitution, the Bylaws, and the Procedures Handbook; for ensuring the proper conduct of business meetings; for providing nominations for offices; and for maintaining historical records.

(a) Bylaws and Procedures Subcommittee

The Bylaws and Procedures Subcommittee is responsible for the preparation of constitutional amendments and changes to the Bylaws for Administrative Committee action, when such amendments or changes either appear necessary or are so directed by the Administrative Committee. The Subcommittee is also responsible for examining Society actions to determine whether these are in accordance with the Constitution and Bylaws of the Society and the Constitution and Bylaws of the IEEE.

The Subcommittee shall also maintain a Handbook of Procedures for the Administrative Committee as a guide for officers and committee members of the Administrative Committee. This Handbook shall be in accordance with these Bylaws, the Society Constitution, and the Constitution and Bylaws of the IEEE. Within this framework, the Handbook shall define the specific duties, actions, and responsibilities of the officers and committee chairmen.

(b) Nominations Subcommittee

The Nominations Subcommittee shall nominate candidates for Elected Members of the Administrative Committee in accordance with Section I of these Bylaws; and shall be responsible for recommending to the Administrative Committee nominees for all IEEE positions for which the Society can nominate, in accordance with Section I of these Bylaws.

5. FINANCE COMMITTEE

The Finance Committee shall be responsible for planning, establishing, and administering budgetary control and disbursing of finances for the Society in accordance with the Constitution and the rules of the IEEE. The Committee shall also be responsible for planning and soliciting Society incomes such as from Institutional Listings in the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES. The Chairman of the Finance Committee shall be a member of the Administrative Committee.

6. STANDARDS COORDINATING COMMITTEE

The Standards Coordinating Committee shall be responsible for establishing and/or reviewing IEEE standards within the scope of interest of the Society. The Committee shall periodically upgrade existing standards and shall initiate standards in new areas when they have become sufficiently established. The Chairman of the Standards Coordinating Committee shall appoint Ad Hoc Standards Committees to deal with specific areas requiring standardization.

7. LONG-RANGE PLANNING COMMITTEE

The Long-Range Planning Committee shall be responsible for review of advanced goals and policies of the Society and shall submit recommendations to the Administrative Committee President and to the Operations Committee Chairman for inclusion in the Constitution, the Bylaws, or the Procedures Handbook.

8. TECHNICAL COORDINATING COMMITTEE

The Technical Coordinating Committee shall investigate, evaluate, and in some instances, promulgate new or peripheral technologies of interest to the Society. The Technical Coordinating Committee shall coordinate with the Meetings and Symposium Committee to afford the latest technical coverage in all meetings of interest to the Society. The Chairman of the Technical Coordinating Committee shall appoint Ad Hoc Technical Committees to deal with specific areas requiring technology emphasis. The Chairman of the Technical Coordinating Committee will be an advisory member of all Technical Committees. The Chairman of each Technical Committee shall report to the Chairman of the Technical Coordinating Committee any significant developments (such as special sessions that Technical Committee is helping to arrange and organize at the MTT/S Symposium, special issues of the TRANSACTIONS that are being planned, etc.) for possible inclusion in the minutes of the Administrative Committee. The Chairman of each Technical Committee should report to and advise the Chairman of the Technical Coordinating Committee each year, prior to the December Administrative Committee meeting, as to the continuation of that Technical Committee during the next year.

9. MEMBERSHIP SERVICES COMMITTEE

The Membership Services Committee shall encourage membership in the Society and shall maintain records of Society membership. The Committee is responsible for the promotion of the Society's area of interest within the formation of new Society Chapters, shall maintain liaison among the IEEE, Society Chapters, and the Administrative Committee, and shall disseminate publicity and information of interest to the IEEE, to the Chapters, and to the Society membership.

(a) The Newsletter Editor

The Newsletter Editor is responsible for the publication of an information bulletin called, "Newsletter."

(b) Chapter Activities Subcommittees

The Chapter Activities Subcommittee shall be responsible for promoting and maintaining close liaison between the Chapters and the Administrative Committee.

(1) National Lecturer

The National Lecturer shall be nominated by the Membership Services Committee and shall be approved by the Administrative Committee during their annual September meeting.

(2) Membership Drive Subcommittee

The Membership Drive Subcommittee shall be responsible for promoting increased membership for the purpose of improved welfare of the Society and the IEEE.

10. AWARDS COMMITTEE

The term of office of the Awards Committee Chairman shall normally begin on October 1 of the year in which that Chairman is appointed. The term of office shall normally be more than 1 year.

The Chairman of the Awards Committee shall hold the grade of Fellow of the IEEE. This Committee shall cooperate with the IEEE in recommending members of the Society for IEEE awards, shall select for the Administrative Committee the recipient of the Microwave Prize, and shall suggest the recipient of the Microwave Career and Microwave Application Awards.

The Chairman of the Awards Committee is empowered to submit to IEEE Headquarters the names of the candidates for IEEE Awards with approval of the President of the Administrative Committee.

B. AD HOC COMMITTEES

The President of the Administrative Committee shall create Ad Hoc Committees when in the President's judgement, such committees are required. The President may appoint a Chairman of an Ad Hoc Committee, who shall be a member of the Society and request the Chairman to appoint additional members, or the President may name any part of all members of an Ad Hoc Committee. Ad Hoc Committees shall serve until they are disbanded by the President of the Administrative Committee.

SECTION IV – MEETING AND SYMPOSIA

A. MEETING NOTICES

No meeting of the Administrative Committee shall be held for purpose of transacting business unless each Administrative Committee member shall have been sent notice of the time and place of such meeting at least 20 days prior to the scheduled date of the meeting.

B. MEETINGS IN ABSENCE OF QUORUM

If less than a quorum attend a duly called meeting, tentative actions may be taken which will become effective upon subsequent ratification, either at a meeting or by mail, by a sufficient number of members as to constitute a majority of the voting members of the Administrative Committee. Minutes of such meetings shall be mailed by the secretary to each Committee member who shall register his disapproval of any actions taken at such meetings within 30 days after the mailing of said minutes. Ratification of such action by said committee member is automatic.

C. SYMPOSIUM

1. PROPOSED SUBMISSION

Proposals by Chapters to Sponsor the Symposium for a given year should be submitted to members of the Administrative Committee between the 52nd and 23rd month prior to the date of the proposed meeting, but no later than May 1.

2. CONSIDERATION OF PROPOSALS

The Administrative Committee will consider proposals received by May 1, at the Symposium Meeting. The Administrative Committee may consider proposals received after May 1, if agreed by a majority of the members present.

3. SELECTION OF SITE

The Administrative Committee will select the site of the Symposium no later than 23 months prior to the date of the proposed meeting.

4. CHAPTER NOTIFICATION

Society Chapters are to be informed of these provisions via the "Newsletter" by the Chairman of the Membership Services Committee in January of each year.

D. OTHER TECHNICAL MEETINGS

Society participation in technical conferences will be in accordance with IEEE policies and practice. Participation of the Society as a joint sponsor, co-sponsor, or co-operator of meetings of another IEEE Group, IEEE Section or a non-IEEE organization requires a vote of approval by the Administrative Committee. The policy governing the extent of participation in such meetings by the Society shall be in accordance with the policy of the Society and the IEEE.

SECTION V – FINANCES

A. BURSAR

The Society shall use the service of the IEEE as Bursar in accordance with the Constitution and the rules of the IEEE.

B. FEES

Each member of the Society shall be assessed a yearly fee, established by the Administrative Committee, which money will be used for the publications and activities of the Society and/or the IEEE.

C. AUTHORIZATION FOR PAYMENT OF BILLS

The approval of one Administrative Committee officer is needed in the case of bills presented to IEEE Headquarters for payment, and the approval of two Administrative Committee Officers is required for payments to any member of the Society or of the Administrative Committee. The Chairman of the Finance Committee will be responsible for requesting all disbursements from IEEE Headquarters.

D. AUTHORIZED BUDGETS

The Administrative Committee may establish an annual operating budget for the operation of any committee and/or activity by a majority vote. Requests for advances, reimbursements, or the payments of bills submitted within the limits of the established budget for any committee, shall be sent by the Committee Chairman to the Chairman of the Finance Committee in accordance with Paragraph C above.

E. SYMPOSIUM ADVANCES

The Administrative Committee may make an advance to the Steering Committee of an annual Symposium of the Society.

F. SYMPOSIUM FINANCES

All financial arrangements for a Symposium or other special activity shall be in accordance with prudent management procedures, applicable IEEE policies, and any special conditions imposed by the Society, Money deposited in a Symposium or similar account shall be identified with the Society and IEEE, In the event of activities co-sponsored with others, a clear and explicit statement of the financial arrangements shall be reduced to writing at the outset.

SECTION VI – MISCELLANEOUS COMMITTEE BUSINESS

A. ADMINISTRATIVE YEAR

The Administrative Year of the Society shall be January 1st through December 31st of the same year.

B. MICROWAVE PRIZE

The Society shall present an award known as "The Microwave Prize" annually. The prize shall be awarded to the author of that paper, published in the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES, PROCEEDINGS OF THE IEEE, or other official IEEE publication, which is judged to be the most significant contribution in the field of interest of the Society. The paper must have been published during the year ending June 30th preceding the award. The selection of the recipient of "The Microwave Prize" will be the responsibility of the Awards Committee who will make their recommendation to the Administrative Committee at the annual meeting of the Administrative Committee. The President of the Administrative Committee shall inform the recipient of "The Microwave Prize" as soon as possible after the Administrative Committee has approved the award. The award shall consist of a suitable certificate, a cash sum of three hundred dollars, and a feature publication in the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES. If the paper as published has more than one author, a certificate will be presented to each author and the cash sum will be divided equally among the authors, except in the case there are four or more authors each shall receive a cash sum of $100.00.

C. MICROWAVE CAREER AWARD

The Society shall present an award known as the Microwave Career Award. This Award shall be considered annually but not necessarily presented annually. The Award shall be made to an individual for a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques. The individual must be a member of the IEEE.

Selection of the recipient of the award will be the responsibility of the MTT/S Awards Committee which will make it's recommendation to the MTT/S Administrative Committee at it's Annual Meeting. Nominations for the Award can be submitted by any member of the Society. The Award shall consist of a suitable certificate, a plaque, a cash sum of five hundred dollars, and a feature publication in the IEEE Transactions on MTT.

1. GUIDELINE FOR MICROWAVE CAREER AWARD

The Award shall be made to an individual for a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques. The eligibility requirements are publication in technical journals, presentation of lectures, contributions to be considered in conjunction with any or all of the areas of contributions mentioned above.

D. MICROWAVE APPLICATION AWARD

The Society shall present an award known as the Microwave Application Award. This Award shall be considered annually but not necessarily presented annually. The Award shall be made to an individual for an outstanding application of microwave theory and techniques.

Selection of the recipient of the Award will be the responsibility of the MTT/S Awards Committee which will make its recommendation to the MTT/S Administrative Committee at its Annual Meeting. Nominations for the Award can be submitted by any member of the Society. The Award shall consist of a suitable certificate, a cash sum of one hundred dollars, and a feature publication in the IEEE Transactions on MTT.

1. GUIDELINE FOR MICROWAVE APPLICATION AWARD

The Award shall be made to an individual for an outstanding application of microwave theory and techniques. The eligibility requirements are creation of a new device, component or technique, novel use of a device or component, or a combination of any or all of the above. Publication of a paper is not required.

The Award is aimed primarily toward young or emerging workers.

SECTION VII – CHANGES TO THE BYLAWS

Changes to these Bylaws shall be made in accordance with Article IX, Section 2, of the Constitution of the Society.

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

Third Class

Non-Profit Organization
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PERMIT No. 20683
LOS ANGELES, CALIF.