IEEE SOCIETY ON MICROWAVE THEORY AND TECHNIQUES

NEWSLETTER

EDITOR: H. J. Kuno

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PRESIDENT'S MESSAGE

By Don Parker

There are at least three principle reasons for the existence of a technical society like MTT-S. These are to provide a) a mechanism for exchanging technical information and ideas b) sponsoring symposia and other technical meetings for person-to-person communications c) and recognition to those who have made significant contributions to the technical field. I feel that MTT-S is fulfilling these functions very well as evidenced by our Transactions and Symposia. I would like to comment briefly on the successes and some of the problems with regard to these.

Our recent symposium in Orlando was excellent. Over 900 attended and interactions among the participants appeared to be very good. The sessions were well attended throughout the three days which is usually indicative of interesting and vital papers. For many sessions the room had to be enlarged to handle the crowds. In excess of 80 exhibitors (the largest yet) showed the latest in microwave components and equipment. There seemed to be a high level of interest in the exhibits. The hotel conference facilities were superior and the hotel was very responsive to our changing needs. It was evident that the local committee paid close attention to details and had made excellent preparations. Congratulations to the Orlando Symposium Steering Committee for organizing an outstanding symposium.

The success of the Symposium with the large attendance and industries heavy demand for microwave engineers are evidence of the healthy state of the microwave buisness. This condition should continue for the next few years. We can expect the attendance at future symposia to be large and the number of exhibitors to continue to increase. As a consequence symposia can only be held in cities that have adequate hotel and meetings rooms. Traditionally ADCOM has rotated the symposium responsibility and location among the various chapters. Many benefits come from the local chapters carrying the responsibility and this has added significantly to strengthening MTT-S. Some means of involving local chapters in organizing future symposia should be provided. Unless we alter the way we presently handle the symposia we will be restricted to a few large chapters located in major cities. Alternatives are under consideration that will preserve involvement by local chapters including the smaller ones in planning future symposia. Stephen Adam is Chairman of an Ad Hoc Committee that will report at the September ADCOM meeting. If you have any thoughts or suggestions along these lines please send them to Stephen or myself.

The IEEE Transactions on Microwave Theory and Techniques continues to be the principle vehicle for exchanging technical information of an archival nature among the microwave community. Because most papers are contributed, the success of the Transactions depends upon the effectiveness of the Editor and the reviewers who voluntarily contribute their time. The Editor's role is time consuming and demanding in order to keep publication times to a minimum. J. Lamar Allen has served as Editor the past two years but must resign effective June 30, 1979 because of an increased work load at the University of South Florida. On behalf of ADCOM and the MTT-S membership, I would like to express our appreciation to Lamar for a job well done.

Fortunately Rienhard Knerr of Bell Telephone Laboratories has agreed to assume the responsibility as Editor beginning 1 July 1979. Rienhold has extensive microwave experience, is conscientious, and will work hard. He will make an excellent Editor.

One of the Editor's major problems will be to encourage the timely publication of application oriented papers. As the microwave field continues to mature the government sponsors less research/and industrial research organizations tend to delay early disclosure of significant technological developments in order to maintain a competitive edge. As a consequence, we continually hear that our Transactions do not contain enough "application" oriented papers. All of us need to help create an environment conducive to publication of advances in the state-of-the-art. Any ideas you have along these lines we would welcome. In some instances, it seems we merely need to show more initiative in our own companies to encourage fellow workers to publish and to show management the benefits to the company and employees from active publication.

Let's all work harder to maintain a healthy society so that government, industry and individuals may mutually benefit.

ADCOM HIGHLIGHTS

By Stephen Adam

The MTT-S ADCOM Symposium meeting was held at the Sheraton Twin Towers Hotel, Orlando, Florida. President Parker opened the meeting with his remarks. He reviewed the action items from January. 1979 MTT representatives to the Popov society were Fred J. Rosenbaum, Reinhart H. Knerr, Charles A. Liechti and R. S. Posner. On cooperating sponsorship, John Horton reported that MTT will be a cooperating sponsor for the APS meeting in Texas in 1980 with O. P. Gandhi as our representative. In addition, the MTT has notified Les Eastman from Cornell University that we will be cooperating sponsors for the Cornell Conference. Further action was taken on sponsorship monies to be distributed to the Electromagnetic Fields in Biological Systems area and an offer was given to the Los Angeles Chapter for assistance to their MTT group if needed for their seminar series next Fall.

ADCOM congratulated the new fellows, Fred J. Rosenbaum and R. A. Pucel. John Horton has been appointed by President Parker to be the contact as technical expert to assist the Washington IEEE Office.

The candidacy of Dr. Leo Young for president of IEEE was discussed. The following resolution was made: "Whereas the MTT-S ADCOM greatly favors elections in which members are offered a choice of two qualified candidates for each office in IEEE, and particularly that for President. Whereas Dr. Leo Young is a past president of the Microwave Theory and Techniques Society, and is a past Director of Division IV, and whereas he has done an outstanding technical and administrative job in these positions. Be it resolved that the MTT-S ADCOM strongly supports the candidacy of Dr. Leo Young for the Presidency of the IEEE."

Due to J. Lamar Allen's work commitments at the University of Southern Florida, he asked to step down after two years as Transactions Editor. President Parker suggested Reinhart Knerr to replace Lamar. Bill Mumford moved to support Dr. Knerr. John Horton seconded the motion. The motion was carried unanimously.

Larry K. Anderson gave the IEEE Division IV Directors report. His report dealt with the finances of TAB. Jim E. Degenford reported on our finances. Our net worth has increased from $K131 to $K178. He has invested some of these funds in six months notes. George Oltman reported that the 26 year index is just about 80% ready, and that its cost should be subtracted from the budget.

John Horton reported that three new Technical Committee chairmen have been appointed: Walter H. Ku will be chairing the Computer Aided Design Technical Committee, R. S. Kagiwada will be chairing the Microwave Acoustics Technical Committee, and Ferdo Ivanek will be chairing the Microwave Systems Technical Committee.

William Chang has requested that MTT put special emphasis on two technical areas: Theory of Guided Structures and Optoelectrical Components in the 1980/1982 time frame. Larry Anderson pointed out that the Optical Society is also considering this area, and MTT should work with them on resolving these issues. John Horton mentioned that Bill Chang is also on their ADCOM so there will be no problem on coordinating the efforts. Furthermore, we are planning a conference on this area for 1981 similar to the Gigabit Logic Conference. A special session is being developed on Surface Acoustic Wave Devices which is progressing very well and is planned for November 1980.

Dick Sparks reported on membership services. The chapter chairman's meeting was scheduled for the evening on the day of the ADCOM meeting where the chapter chairmen were given a checklist for chapter activities as well as a list of potential speakers. John Kuno reported that the most difficult part of the Newsletter Editorship is getting the news inputs on time. His deadline is two to three weeks after the ADCOM meeting.

Dick Sparks reported on the National Lecturer where Charles Liechti's report was included. Charles recommended that the travel budget be increased. Steve Adam moved to increase the budget to $3,000, and Lamar Allen seconded it. The motion carried unanimously.

Membership Drive: The membership as of December was 5,900, which is up – an increase probably due to a good business year. It was also pointed out that the Workshops have helped bring in new members. Further discussion and ideas were given on how to recruit new members – mostly student members – interested in microwaves. Some inexpensive format of advertisement for campus use should be developed. It was suggested that information may be included in the Microwave Journal as a brochure which could then be mailed to about 45,000 subscribers. In addition, this brochure could be sent in bulk for distribution on campuses.

Steve Temple gave his MTT Chapter records report. He showed an updated table of reported chapter meetings for the first four months of 1979. He received reports for a total of 22 meetings from eight chapters since the beginning of 1979. It was interesting to note that for regular meetings reported, the average attendance was 20, while the average attendance for Dr. Liechti's National Lecturer presentation was 48. This indicates that the interest in this topic and the National Lecturer is more than 100% above the average. The highlight of the third quarter reporting was GaAs Power FET workshop sponsored by the Dallas Chapter. It was attended by approximately 130 persons.

Barry E. Spielman reported that one-day Symposia Activities are being pursued in three areas:

1. One-day Radar Symposia
2. One-day Microwave Bioeffects Symposia
3. One-day Microwave Power FET Modeling and Amplifier Design Symposia

The point was raised that we don't want these courses competing with established University courses. Larry Whicker stated that the purpose of the series is to help the smaller chapters. John Horton suggested that we deal with each symposium one at a time as they come along.

Fred. J. Rosenbaum reported that he and Reinhart Knerr would put together the reprint volume for the IEEE. He will have a report on that at the next meeting. Fred also touched on the fact that the MTT Transactions were criticized, and in response to that criticism, he suggested that we have more tutorial articles published in non-periodical publications. The technical committees should come up with names of people to write these articles. Fred will contact each of the technical committee chairmen. John Kuno suggested that the National Lecturer write an article. It was also noted that in Japan, one-day microwave meetings are held every two to three months at which tutorial papers are presented.

Harlan Howe reported on Meetings and Symposia. The final report for the 1978 MTT-S Symposium has been completed. Pete Rodrigue moved to commend the organizers of the Ottawa Symposium for their excellent job. John Horton seconded the motion; it carried unanimously. Harlan also touched on the subject of the symposium's growth in attendance; more exhibition space is needed every year. In response to this problem, along with the cost of accommodations, Steve Adam is going to hold a meeting with several ADCOM members to discuss the Long Range Planning aspects for future symposia. He will report his findings at the next ADCOM meeting.

Lamar Allen reported on the 1979 Symposium; everything was running smoothly. He reported 550 have pre-registered and 168 registered for the workshop and the Gigabit Logic Conference.

The 1980 Symposium report was given by Larry Whicker. Larry reported that the 1980 Symposium Steering Committee has been meeting regularly; they submitted a revised budget. The budget is based on $55 for members and $70 for non-member pre-registration, and $65 and $85 for late registrants. The break-even point is 520 attendees. Pete Rodrigue suggested that this number was low, based on present attendance figures. Pete moved to accept the budget and Lamar seconded; it was accepted unanimously.

Al Clavin reported on the 1981 Symposium to be held in Los Angeles. He reported that the symposium site was moved to the Bonaventure Hotel and the dates are now June 15-17. The conference will be a joint conference with AP; therefore, 1200 rooms of the hotel are needed. The present rate is $40/day for a room; that will be modified by next year.

Ken Button reported on the Sub-millimeter Conference which – according to him – is going very well. They alternate yearly between Europe and the USA. MTT-S, QEA-S and URSI co-sponsor the conference. In 1979 it will be held at the Americana in Miami Beach; in 1980 it will be held in Wurtzburg, West Germany; in 1981 it's planned to be held in the Bahamas. Publications of the proceedings include collections of selected papers. Ken is also putting together books of tutorial notes. The series will be published jointly by MTT and QEA. There will be eight volumes; 68 authors are working on it.

Future Symposia: 1983 is slated for Boston and the responsible person is Harlan Howe. 1984 is in San Francisco – the responsible person is Steve Adam. Steve Adam mentioned that the Regency Hyatt House in San Francisco has invited us to hold our next ADCOM meeting there in September; we will be given a tour.

After lunch Larmar Allen reported on the MTT Transactions. Due to the large influx of papers, he has set up a pre-review board in which 60% rejections result. The December 1979 Symposium Issue with J. C. Wiltse as guest editor is ready for review. May 1980 Gigabit Logic Issue, guest editor P. T. Greiling. SAW Devices Special Issue is slated for November 1980. We need to get an editor for this Special Issue.

George Oltman, Applications Editor, gave his report on the Transactions. To make MTT Transactions more useful for the general microwave community in the applications aspect, George suggested: Invite editorial authors in evolving and changing technologies; find reviewers who are interested in the application-oriented papers. Present reviewers are usually interested in theoretical papers; assist authors to reword their papers to make them clearer and address them to the more general application-oriented audience.

John Horton noted that theory papers should have experimental data proving their theory at the end. Hal Sobol mentioned that the authors of theoretical papers can't always be expected to present experimental results, but should be encouraged to do so, but do not reject for that reason. Bert Berson mentioned that we need a reader survey either through the Newsletter or other media.

Lamar Allen thanked us for his editorial term; he enjoyed it, but his University involvement does not allow him to do the technical program plus editorship at the same time. ADCOM expressed its appreciation to Lamar for his work as editor.

Ernest Komarek reported on Standards Coordinating Committee activities. He discussed Hal Schrank's written report on Waveguide Standards work. Hal suggested that a New Microstrip Terms Committee be formed. Harlan Howe has agreed to serve as chairman of this Committee. Bill Mumford and Sal Rosenthal are the MTT representatives to the NCC95 Committee.

Charles Rucker reported on operations. The Nominations Committee for the 1980 MTT ADCOM elections has been formed. The members of this committee are: Bob Hicks, Chairman; Bert Berson, Gideon Kantor, Pat Burns, Madhu S. Gupta. The committee was formed on March 29th; coordinating meeting was on April 30th; nomination list is due to the chairman by May 30th; composite list returned for ranking by June 15th; rankings returned to chairman by July 15th; nominee acceptance obtained by August 15th; slate submitted to ADCOM meeting by September 17th meeting in San Francisco. This committee will prepare a slate of 12 candidates for consideration for the six 3-year vacancies and a slate of 2 candidates to fulfill the one year remaining of Don Parker's term.

Charles Rucker reported on the final accounting of the membership poll related to nominations and elections. Bylaws revisions were requested by the Washington D.C.

CHAPTER ACTIVITIES REPORT

By R. A. Sparks

Another successful International Microwave Symposium is behind us with the opportunity to get updated technically and familiarized with the latest product offerings of microwave manufacturers.

The ADCOM meeting on Sunday morning prior to the Symposium was followed in the evening by the Chapter Chairmen's dinner and meeting which was attended by 28 representatives. Reports were given by all Chapter Chairmen present and Certificates of Recognition handed out. Most Chapters were able to report on fairly active technical programs during the year and several had held successful one day seminars on specialized microwave topics.

One of the major problems that ADCOM has experienced in the past is communicating with the Chapters through their elected officers. As noted in the last issue of the Newsletter, each Chapter has been assigned an ADCOM member to serve in a direct liaison capacity. I had sent letters to each Chapter Chairman notifying him of this fact earlier in the year. If, because of election changes in Chapter officers, you currently do not know whom to contact please write to me or call me directly. I would like to maintain an up to date list of Chapter Officers and need all the accurate inputs I can get.

Plans for your Fall programs should be firming up at this time. An updated Speakers List should be in the hands of every Chapter Chairman and arrangements made to invite the National Lecturer, Dr. James Wiltse, to fit into your technical program during 1979–1980. The National Lecturer may be scheduled by writing or calling:

Dr. James C. Wiltse, Jr.
Engineering Experiment Station
Georgia Institute of Technology
Atlanta, Georgia 30332
Telephone: (404) 894-3494

In addition, the Technical Committee Chairmen listed in the 1979 MTT-S Committee Directory may be contacted for assistance in obtaining speakers in their specialty area. I would like to know of any Chapters that are having trouble in this regard and will work with your ADCOM liaison member in putting together a successful technical program.

MICROWAVE CIRCUIT DESIGN – UCLA Extension

Date:	December 10 – 14, 1979
Place:	6266 Boelter Hall, UCLA
Fee:	$525 includes handout materials and lecture notes
Contact:	UCLA Extension (213) 825-3344

The course is intended to bring the practicing engineer up to date with recently developed microwave circuit design techniques.

ADCOM HIGHLIGHTS (Continued)

Chapter. The poll closing date was January 31, 1979 – no responses were received after closing. The response to the poll was very small. There were only 115 responses. The voting members voted for changes in nominations and proposed changes to the elections in about a 2 to 1 margin. Due to the small number of responses to the poll, ADCOM has temporarily tabled the subject. It is to be considered at a subsequent meeting.

V. G. Gelnovatch, MTT ADCOM representative to the Solid State Council, reported on their activities. In 1980 they will hold a conference in the San Francisco Hilton; in 1981 it will probably be held in New York. They will be held on the East and the West Coast in alternating years.

Steve Adam reported on Long Range Planning. Three areas were discussed:

1. Some difficulties are evident in finding suitable locations for Future Sites of Microwave Symposia. Steve asked Larry Whicker, Harlan Howe, Ken Button, Don Parker and Howard Ellowitz to join him at a special committee meeting in Orlando to discuss the situation and generate a strategy as to how to deal with this dilemma. He will report their findings at the next ADCOM meeting in San Francisco.

2. The Re-organization of Long Range Planning Committee. The task of trying to devote time to understand and contribute to this very important effort which is so vital to the health of the Society is given to the Vice President of ADCOM. By the time the poor chap can get acquainted with the subject and proposes something, he has only a year to run the Society. We are missing continuity. He proposed to change the Long Range Planning Committee. It still should be chaired by the Vice President – who really gets a lot of fast education about the Society and the Institute – but also helping him as contributing members should be the three Ex-officio past Presidents. This will provide not only continuity in this important work, but the opportunity to apply experiences gained by the presidency; an important feedback mechanism not fully exploited until now.

3. Publications Evaluations Committee. In recent years we have made surveys and discussed the complexion of the Transactions. This past year, further inputs are available for us to review our publication procedures. Steve recommended that the President appoint a committee with the objective of studying this issue and coming up with recommendations. The following committee was appointed: Steve Adam (Chairman), Hal Sobol, Ken Button, Fred Rosenbaum, Lamar Allen.

The next ADCOM meeting will be held September 17, 1979 in San Francisco.

EDITOR'S NOTE

By H. J. Kuno

We had another successful Microwave Symposium. It was the biggest ever! The symposium was well organized, prepared, and run. Especially noteworthy were . . .

- Reflecting the nature of the International Microwave Symposium with this year's theme "The World of Microwaves", many papers and attendees were from Europe and Japan. Technical presentations by international authors have improved significantly over the years. This is due to the effort of both the authors themselves and a group of people such as Steve Adam and Kiyo Tomiyasu, and others who assisted the authors in preparing the presentations.
- The cartoon-aided presentation by Professor Suetake in chairing the Japanese Microwave Session was entertaining and well received.
- Many MTT members were running (or jogging) each morning before the first session during the symposium. It would be nice to see more MTT members pick up running before next year's symposium.
- There were no Florida love bugs. Thank God for that.
- Those who visited the Kennedy Space Center had the extra treat of seeing the Space Shuttle Orbiter which had just been placed on the launching pad.
- I'm not sure about the banquet speaker's point. As a test subject, I did not feel any effects of color, radiation, or sound on my muscle strength contrary to the speaker's argument. I guess I'm not a good test subject. I am certain, however, that everyone had a good time.
- The technical program was excellent. A number of sessions were so well attended that additional room was needed. The rearrangement was made very smoothly and quickly within a matter of a few minutes to accommodate the overflow of people in the audience. Audio and visual equipment worked well.

These were some of the factors that contributed to a most successful symposium.

FOURTH INTERNATIONAL CONFERENCE ON INFRARED AND NEAR-MILLIMETER WAVES
Americana Hotel of Bal Harbour
Miami Beach, Florida, USA,
December 10-15, 1979

SYMPOSIUM GROWTH INCREASES NEED FOR LONG RANGE PLANNING

by Harlan Howe

In recent years, our National MTT Symposium has grown and prospered as evidenced by the recent spectacular success of the Orlando, Florida Symposium. Over 900 people registered for the technical sessions, more than 400 attended the Banquet and, with the addition of exhibits personnel, the Symposium required over 1200 hotel rooms.

While this increased interest in the Symposium has been encouraged and is gratifying, it has also created a number of problems primarily related to long range planning.

In order to obtain the necessary commitments from hotels and convention centers (which themselves are enjoying increased prosperity), it has become necessary to plan the MTT Symposium at least five years in advance. The present schedule out to 1984 is:

Washington, D.C.	1980
Los Angeles	1981
Dallas	1982
Boston*	1983
San Francisco*	1984

Subject to final ADCOM approval.

A recent change in the Bylaws permits the Chapters to submit simple letter proposals to make early determination of sites for five and six years in the future. These are then followed up by more detailed plans and proposals as the Symposium draws near. It will be noticed that all of these locations are large cities. This is primarily due to the fact that the minimum requirements for holding a Symposium have grown to a point where many small cities cannot support them. We now require, as a minimum, 1000 hotel rooms (preferably in the prime hotel) with additional overflow facilities located nearby; 20,000 square feet of exhibit space; four meeting rooms capable of holding 200 people each; a hall, for the opening session and any joint sessions, capable of holding 700 people; and banquet facilities for 300 to 500 people. These minimum requirements obviously limit the number of cities which are capable of hosting the MTT Symposium, and also tend to preclude participation in the Symposium by small but active Chapters who might otherwise bid to host the Symposium.

It has been suggested, but not yet approved, that one or more small but active Chapters might be able to host the Symposium at an off-site location specifically designed for conventions; i.e., Las Vegas, Miami Beach, San Juan, etc. Such a plan would let the Chapter members handle the technical portion of the program, with much of the logistic work being done by the Exhibition Managers, Horizon House. This would then serve the purpose of strengthening the local Chapter through its participation in hosting the Symposium, as well as providing facilities which are adequate for the Symposium's current and projected needs.

Letter proposals by Chapters small and large, as well as any comments or suggestions on the proposed off-site plan, will be welcomed for discussion at the September ADCOM Meeting.

History of MTT

by Ted Saad

ADCOM VII July 1, 1958 through June 30, 1959

Administrative Committee: A. A. Oliner, Chairman
K. Tomiyasu, Vice Chairman
S. W. Rosenthal, Secretary-Treasurer

T. N. Anderson	R. C. Hansen	G. Shapiro
R. E. Beam	W. W. Mumford	G. Sinclair
A. C. Beck	W. L. Pritchard	P. D. Strum
A. G. Clavier	T. S. Saad	M. C. Thompson
S. B. Cohn	R. F. Schwartz	R. D. Wengenroth

H. F. Engelmann, Ex-Officio
Donald D. King, Transactions Editor
George C. Southworth, Honorary Life Member

The Chairman of the eighth Adcom was Art Oliner and the Vice Chairman was Kiyo Tomiyasu. Saul Rosenthal was in his second year as Secretary-Treasurer, Don King continued as Editor of the Transactions and Gus Shapiro was still the Newsletter Editor.

One matter of concern for that and other Adcoms was the Annual Review. The review was a summary of all the microwave papers appearing in Journals throughout the world. Because of the effort involved in preparing a comprehensive review of all of the major U.S. and foreign publications, it was difficult to find volunteers willing and capable of supplying the information. There was discussion during the year about discontinuing the practice, but the reviews and the discussions continued.

As interest in the Transactions and the Annual Symposium increased, microwave papers submitted for presentation at the IRE National Convention decreased. At the 1959 MTT Symposium, a survey was made to determine the types of papers attendees would prefer to have presented at the National Convention. Sixty-two people preferred invited papers only, twelve opted for contributed papers only, and 192 felt that both invited and contributed papers would be desirable. Some Adcom members felt that a form of summary discussion would be helpful, either by the Chairman of the session or by an invited speaker at the session. However, the ultimate decision for stimulating the microwave sessions at the IRE National Convention was left up to the Meetings Committee Chairman. But the fact remained that interest in the National Convention, by microwave people, was diminishing rapidly.

An activity that appeared to be gaining in popularity was the presentation of lecture series by the local chapters. A lecture series on Mircowave Antenna Theory and Techniques was held by the New York Chapter of MTT during the early part of 1960. The Boston Chapter also had a six week lecture series at about that time devoted to the general subject of microwaves.

Don King as Transactions Editor proposed, and the Adcom approved, the increase in Transactions Issues from four to six each year. This began in January of 1960. The Adcom was assured that the new policy would also result in an expedited printing schedule that would significantly reduce the time between when an author submits a paper to when he would see it in print.

During the 1960 period, there appeared to be concern about the increasing cash balance in the treasury and there were many discussions devoted to the question of how to put the money to work most effectively. One recommendation was for some type of subsidization for technical publications sponsored by IRE and others. Another idea was to hire temporary help for the National Symposium Committee in the form of a professional manager. Still another was to hire part-time help for the Transactions Editor. It was agreed that all of these matters would be examined.

After soliciting the local chapters relative to their interest in the 1961 National Symposium, indications of interest were received from Long Island, Washington, D.C., Baltimore and Boulder, Colorado. The Adcom, after considering the four applications, selected Washington, D.C. as the site for the 1961 Symposium.

At one of the Adcom meetings, there was a discussion about the possibility of publishing all of the Symposium papers, without prior review, in a special issue of the Transactions to be for distribution at the Symposium. However, because of the concern for quality of technical content and the insistence on a review process, the proposal was tabled.

One of the highlights of the year was the naming of Dr. Andre G. Clavier an Honorary Life Member of the PGMTT Administrative Committee.

The microwave prize for 1959, which was presented in May of 1960 at the Annual Symposium, was awarded to Bert A. Auld for his paper entitled "The Synthesis of Symetrical Waveguide Circulators" which was published in the April 1959 MTT Transactions.

Advertising was still coming in at an improved rate under the guidance of Tore Anderson. He asked for and received approval from the Adcom to charge companies $210.00 for six institutional listings in the Transactions. Tore had done such an effective job selling ads in the Transactions, the finances of the Adcom were in excellent condition. As of May 31, 1960, the Treasurer reported a cash balance of $23,340.47.

The attendance at the San Diego Symposium was 584. The meeting was held at the Hotel Del Coronado which was situated on a penninsula between San Diego Bay and the Pacific Ocean. It was the first time that the Annual Symposium had been held in an isolated area where the attendees were able to intermingle with one another with few outside distractions. In a questionnaire that was distributed at the Symposium to determine the memberships' reaction to the meeting, the comments were generally favorable and, despite the misgivings of having a symposium in an area which was not necessarily a center of microwave activity, it proved to be a complete success.

With the continued interest in, and the growing importance of the Annual Symposium, a motion was passed which required the Symposium Committee to write a final report within two months of the end of the Symposium. The report was to include a financial statement as well as any other information which might be of help to future Symposium Committees.

BYLAWS

by C. T. Rucker

STRAW VOTE SUMMARY

Our Fall Newsletter reported changes suggested by the Washington Chapter to nominations and elections procedures for MTT-S ADCOM members. A tear-out response card was included so that MTT members could express their views regarding the proposed changes.

It is disappointing that only 115 members (≈2%) felt motivated to respond to the poll. The changes proposed were substantive and deserved a better response. As a point of reference, it is interesting that about 6 percent of IEEE members vote in National Elections.

The results of the poll are tabulated below. Forty five of those who responded to the poll had comments, either pro or con, regarding the proposed changes. A few of these are included for your information.

	Proposed Changes to Nominations			Proposed Changes to Elections		
Vote:	Yes	No	?	Yes	No	?
West	29	8	1	31	7	0
NE	29	16	1	28	18	0
Mid	9	5	0	11	3	0
South	4	8	0	6	6	0
Foreign	3	2	0	4	1	0
Totals	74	39	2	80	35	0

Total Respondents = 115

Member Comments

In Favor	Against
• All the proposed changes are valid in principle	• Existing procedures are adequate — time better spent on technical and socioeconomic matters
• Changes conform to most other societies	• Proposed approach would be a popularity contest
• Encourages more member participation — minimize cliques	• MTT is already well run
• More democratic	• Present system works well — change only when and if it fails to do so
• Change looks reasonable	• Process just fine as is
• Works well in AP-S	• Proposal would politicize ADCOM
• More democratic but how do we insure member participation?	• Now have a good system
• Free elections will improve MTT	• Changes too complicated
• I favor changes	• Change not needed. Use petition or simply suggest candidates to nominations committee
• Agree totally with changes	
• Ambivalent	
• Changes are impractical because of weak member response	

CONCLUSION

After considerable discussion, ADCOM voted not to implement the proposed changes. The chief reason for the negative vote at this time involved a reluctance on the part of most members to make the suggested changes based on a vote of only 2% of the membership.

The 1980 Nominations Committee, chaired by Bob Hicks, is now hard at work. Bob would be pleased to hear from any MTT member who has suggestions or recommendations for nominees. If that doesn't seem a good approach, then give the petition route a try. Bob's address and phone number are:

Mr. Robert Hicks
Collins Radio Company
1200 N. Alma Road
Richardson, Texas 75080

It is interesting that, of those who commented, the responses were equally divided for and against the proposal. A few responses were amusing and are listed below for your enjoyment.

- I AM TOO CONFUSED TO VOTE FOR THE CHANGE AT PRESENT.
- THE U.S. CONSTITUTION IS EASIER TO UNDERSTAND–I REREAD IT TO SEE.
- I AM IN FAVOR BECAUSE ADCOM DOESN'T SEEM TO CARE.
- WOULD PREFER TO VOTE "DO NOT OBJECT".
- DON'T LIKE OLD OR NEW, BUT LIKE NEW BEST.

GUEST EDITORIAL

ON INFLATION AND THE ENGINEER

By A. Clavin

When I first started my career as an engineer in the early 50's my salary was about $5K/year and my senior supervisor made about $15K. A ratio of 3:1. Today starting engineers make from $17K–$20K and the senior supervisor perhaps $35K – a ratio of 2:1. Additionally, the tax bite is considerably higher for the senior engineer and so the compression is probably worse than 2:1. In other words, senior engineers are making more money – but enjoying it less. (For more information on engineering salaries see "Mechanical Engineering" May 1979, pages 22–27, an excellent article.) Also note that the median engineer's salary today is $28K after 30 years.

Another thought has been with me lately. My age! Next month (June) I'll be 55 years young. I had thought that 40 years was a milestone of some significance – but 55 I believe is now of more significance because at my company (and most others) I have the option for early retirement. So, – I think of the senior engineer at 55+ years with a compressed salary and facing double digit inflation. Not a pretty picture. In fact, unless he has been quite highly paid or has some independent means, his option to retire has been lost to inflation. He must continue to work until the inflation rate is substantially reduced or he is forced to retire by company rules. He could also choose to reduce his living standard to some unpredictable lower level.

All this is happening at the same time we hear about government employees who do not pay social security taxes and reture early (after 20 years' service). They then are double and triple dipping into pension funds plus benefiting from social security.

Oh well, we never entered the engineering field to get rich or retire comfortably – did we?

GUEST EDITORIAL

THE CHANGING FACE OF MICROWAVES AND MILLIMETER WAVES: Technical and Social Problems

By Leo Young

I started in microwaves in the summer of 1950. So soon after World War II microwaves were still a new and glamorous field. Since those days, the demand for microwave engineers has gone up and down, and we have had to adapt to changing needs. Many who were in R&D and wanted to stay in R&D moved into solid state electronics or lasers and electro-optics, or into surface acoustic waves, while others moved into more applied areas such as radar, communications, or electronic warfare. The great microwave tube companies fell on hard times and many diversified, for example, into microwave solid state.

Millimeter waves have been "around the corner" for a long time. More than 25 years ago I worked on a 35-gigahertz radar. Since then, there have been many well attended millimeter-wave conferences, often sponsored by MTT. And then, after the enthusiam of each conference died down, usually nothing changed. Was no one listening? No, the driving need just wasn't there. We are again seeing a revival of interest in millimeter waves, mainly in satellite communications and for missile seekers.

It is different this time? Let's examine the question.

Satellite communications are growing. Frequency allocations are more difficult to get. Millimeter waves will do fine below about 50 GHz. From 50 to 100 GHz there is the "great wall" of high attenuation at around 60 GHz and the "window" around 94 GHz (but atmospheric attenuation is not as good there as in the 35-GHz window, with fog and cloud attenuation just beginning to be a problem). Above 100 GHz probably not much for a while.

The performance of millimeter wave sensors falls between microwave and infrared sensors in range, resolution, and weather performance. Mm waves seem to have a definite place in military systems, especially on the battlefield (where the range is short, viewing conditions often atrocious, and resolution requirements moderate).

Another interesting fact of life is that where millimeter waves compete with IR, there is more of a "social problem" to convince the IR people to accept millimeter waves, then where millimeter waves compete with microwaves, where the community is more receptive to millimeter waves!

LETTERS TO THE EDITOR

ON THE SHORTAGE OF ENGINEERS

In his guest editorial of the above title (MTT–Spring 1979, p. 9) Al Clavin states his view of the problem in two short sentences near the middle of his editorial: "There are just not enough qualified engineers. The solution rests only with long term activities." In each case I believe Mr. Clavin is mistaken – possibly because he let his first thought stop too soon.

What I think Mr. Clavin should have said is that a) there are just not enough engineers available at current prices (salaries); and b) If qualified engineers were paid enough it would become uneconomical to use them – as most are now used – in a lot of routine assignments which could then be filled – although at higher cost per task – by lesser qualified persons; and c) The solution is available immediately and no long term action is needed. Indeed, some of the long term actions proposed by Mr. Clavin would be "–planting the seeds for yet another surplus." as Mr. Clavin himself considers at least possible.

That the solution to the "engineering shortage" is mainly – or wholly – economical in nature is also suggested by Mr. Clavin's statement that "Almost any medical doctor these days can start at $50,000 to $100,000 a year. How many engineers can start at those levels?" I would ask how many engineers have today REACHED those levels? That is if they are still functioning as engineers.

Jorgen P. Vinding

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WHY I FEEL SO STRONGLY ABOUT IEEE

By Leo Young,
IEEE Presidental Candidate

IEEE has been good to me. I could not have achieved whatever I did without the encouragement of other IEEE members, nor without the technical stimulation of IEEE publications and conferences. Later, the same IEEE publications helped my ideas and contributions gain wide acceptance by industry, and helped me win recognition, awards, and (best of all) lasting friendships. As a technical person, I have a lot to thank IEEE for.

Yes, I feel very strongly about IEEE. To me it is the professional association *par excellence. The Institute exists to serve engineers, not just engineering. It can do so only if the Institute is responsive to its members, and that's the basic issue in this election.*

IEEE's prestige rests on its technical excellence. Without first-rate publications and technical activities the Institute is nothing. But Man does not live by bread alone, and Engineers don't live by technology alone. IEEE must provide more than technical sustenance, it must provide support for the career needs of its members. When engineering careers – incomes, jobs, pension rights, etc. – are threatened, then engineers have a right to protect their careers, and to expect help from IEEE. Similarly, IEEE can and must provide the best possible technical inputs to our political decision makers. Today more than ever before we need a commitment to these goals. We need *leadership* if IEEE is to rise to the challenge.

Leadership means being ahead, not behind. It means acting, not reacting. Yet the Board of Directors is again reacting (negatively) to two eminently sensible petitions to amend the constitution, without offering anything better. One petition, to elect the USAB chairman by all U.S. members, the Board dismissed after a cursory discussion. The other petition, to have the Nominations and Appointments Committee elected by all IEEE members and remove it from the self-perpetuating control fo the incumbent and past Presidents (who hold 3 out of 12 seats on it, including the chairmanship), is quite innocuous and long overdue; several directors support this reform, but the official Board answer to the members is again "Nyet."

Leadership is showing the way, not following, as when the Board candidate promises "to begin another serious effort in the portable pension area." Where was he when I needed his help these past four years when I headed up the Pension Task Force?

I know the Board well, and regard most of its individual members as friends. But collectively the Board and I have a difference of opinion. I could not have gone to the members in good conscience had I not first worked in good faith with the Board and its Committees, for example, in trying to enlist Board support for sensible reforms *before*

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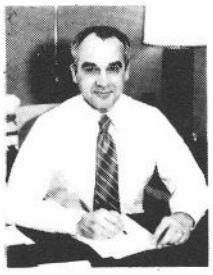

A PHILOSOPHY FOR 1980

By B. H. Schneider
IEEE Presidential Candidate

The IEEE, as well as being by far the largest technical-professional organization of its kind, is also the most democratic and has perhaps the greatest diversity of membership in that members belong for a great many different reasons. The democratically constituted board has a difficult task developing programs which are of interest to the vast majority of the membership. But in spite of some criticism from many sides, the success of IEEE's operations over the past few years must in the end be measured by (1) A growth of 29,000 members in the last ten years, 8,400 in the last year alone. Membership is still continuing to grow, (2) in spite of inflation, dues have not been raised since 1976, (3) Educational programs have increased by more than an order of magnitude, (4) All technical activities have increased dramatically, (5) Professional Activities, although still the subject of controversy, have some measurable successes behind them.

The challenge of the future is to continue to keep the IEEE moving forward while still responding effectively to minority points of view. This will require the strongest possible leadership and broad experience in IEEE affairs.

The presidential candidate is frequently questioned concerning specific plans for the year of office, if elected. It has to be remembered that by Constitution and By-laws, the IEEE President, in fact, has very little direct power. As appropriate in a democratic organization, the Board of Directors has final authority. The President, however, has great powers of persuasion through the prestige of the office and through the exercise of leadership. To be an effective President, the holder of the office must also be an effective leader. The following are some of the areas on which I expect to concentrate my efforts, aside from the day to day duties of presidency.

1. The IEEE President should be seen, heard, and be willing to listen. I plan to visit as many Regional Committees, Society AdComs, Sections, and Conferences as possible. To be an effective President, one must keep an ear to the ground.
2. We plan to set up a formal procedure to establish listening sessions for hearing alternative and contrary points of view on IEEE policies and programs. The details for this program will be outlined in the President's column in the January 1980 issue of The Institute. Implicit in such a program is response to worthwhile suggestions by encouraging change where warranted.

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LETTERS TO THE EDITOR (Continued)

Dear Editor:

To find the answer to "where have all the microwave engineers gone?" I suggest that the answer lies with the people who have not been renewing their MTT membership. Why not survey them to get the answer.

I for one have considered dropping my membership (and in fact briefly did). I do not find the articles in the MTT of practical use to the average practitioner. Rarely, do I find an article which I can use in my daily work. Either they are too esoteric (beyond me, and I suspect most engineers, understanding) or if they are of the "application" variety they are all to often too vague to do an actual design job.

Therefore, I advocate publication of more down to earth how to design and construct the design. I believe that type of article would be most beneficial to the typical microwave engineer. In addition, publication of programs written for the various handheld programmable calculators (HP 65, 67, T1 59 etc.,) would be of interest including, of course, the equations there are.

I have been in the microwave industry for 31 years – 20 of them as an engineer. I would look forward to the MTT transactions if they would be of greater daily use to me. I have been an MTT member since 1958.

Yours truly,

Richard M. Brown

STATEMENT BY B. H. SCHNEIDER (Continued)

3. A special effort will be made to better understand the special problems of the Computer Society and the Power Engineering Society, so that steps can be taken to make them more comfortable in the IEEE environment.
4. Continue efforts to resolve different points of view regarding the professional activities program. USAB will be encouraged to renew efforts in the portable pensions area, as well as the development of programs which address the possibilities of a future changing job market for our members.
5. Continue to work with industrial leaders who are employers of our members to obtain their understanding of and support for IEEE programs.
6. Keep the Institute on a sound financial footing.

CALL FOR PAPERS

ISCAS/80 will be held at the Shamrock Hilton Hotel, Houston Texas, USA, April 28 – 30, 1980. Workshops will be conducted by the various technical committees of the Circuits and Systems Society immediately preceding the symposium on April 27th.

COMPUTER AIDED MICROWAVE CIRCUIT DESIGN

Date: September 22, 1979
Place: Brighton, ENGLAND
(Following the 9th European Microwave Conference)

An introduction to computer aided circuit analysis optimization and synthesis through illustrative case studies.

Fee and registration required.

Contact: Mr. Gaylord Moore; LUCS, 56-64 Leonard Street, London EC2 4 AN, Phone: 01-253-1066

STATEMENT BY LEO YOUNG (Continued)

(not after) they became petitions. There is a feeling that the Board's word can defeat any petition. There is a belief that *any* candidate the Board puts up can win the Presidency. I challenge that assumption.

Yes, there is a choice this year. The Board candidate has specialized in financial affairs (treasurer, comptroller, real estate, and finance committees), while I have come up thru the technical ranks (author, editor, conference chairman, Society President, etc.), and have pioneered and innovated in professional activities as well. The members must decide who is best qualified to *lead* IEEE.

If I am elected, I shall endeavor to maintain IEEE's technical excellence, encourage our publications to disseminate more practical information, work to enhance engineering as a profession, speak up whenever engineering careers are threatened, interact constructively with governmental bodies, support legislation beneficial to the engineer, and last but not least, *make ours a more responsive, a more democratic Institute.*

Dr. Leo Young handing his petition to run for IEEE President to Miss Emily Sirjane, Director of Corporate Services, in her office on April 25, 1979, one month before the deadline. By that time well over 3,000 signatures had been received, more than twice the number required.

1979 MICROWAVE SYMPOSIUM REPORT

By R. E. Henning

The 1979 Symposium program offered everyone new insights and angles on their own key areas of interest as well as a new perspective on the continuously expanding "World of Microwaves". Hosts for this April 30 through May 4 symposium were the Orlando and the Florida West Coast chapters of MTT-S. They provided an efficient and congenial setting for this symposium – a setting where it was easy and pleasant to absorb new ideas and to reflect on new developments, and equally easy to relax, renew old ties, and establish new friendships and professional contacts. While final results still are being tallied, there is no question that the symposium and its associated workshops and Specialty Conference had over 1,000 attendees and that the "World of Microwaves" is very much alive. Almost half of the symposium attendees stayed for one or more workshops or the new Specialty Conference on Gigabit Logic for Microwave Systems. Evidence was everywhere that our microwave field is still growing –still expanding – and assuming an ever-increasing international flavor.

MTT members who made all of this possible and who deserve a lot of applause were, of course, the local 1979 Symposium Committee Chairmen. All of them had in the past filled other important posts at IEEE meetings and this experience proved to be a tremendous asset.

The Technical Program Committee under the guidance of Lamar Allen and Jim Wiltse and with the help of 78 experts in the multitude of sub-specialties of our microwave field screened 260 papers to prepare the final program. Scheduling requirements dictated that the reviewers receive papers for review just before Christmas and that they meet for final selection decisions immediately after the New Year's. The committee did a tremendous job with, no doubt, many personal sacrifices during the busy holiday season.

Final selection of a paper for an individual session was made by experts in the specialty area of the submitted papers. No quotas or similar forced limits to form a program were used. After the experts made their acceptance decision, the program fell into place almost perfectly. Only five invited papers were needed to round subjects.

The technical committees of MTT-S, coordinated by John Horton, played a extremely important role in guiding the program committees co-chairmen to the experts. The same technical committees also played a key role in organizing the workshops and the specialty conference which followed the three day symposium. In addition to John Horton, Paul T. Greiling, Dick Swartley, Ralph Levy, Chuck Buntshuh and Frank Reisch deserve special mention.

The Local Arrangements Committee worked hard to

SCENES FROM 1979 MTT-S INTERNATIONAL MICROWAVE SYMPOSIUM

provide a smooth, efficient meeting with plenty of southern hospitality. Joe Pullara coordinated this effort. Key roles were also played by Ernie Erickson – meeting facilities, Dick McCoy – registration, and George McClure – hospitality and hotel.

The excellent, over 600 page digest was put together in record time by John Tracy and his Digest Committee. Ron Tate and his Finance Committee were a tremendous help. Incidently, the biggest surplus ever realized will revert to the members in the form of services next year. Mike Kovac's Publicity Committee was also invaluable.

The largest exhibit ever in a terrific exhibit hall was a special treat. Howard Ellowitz of Horizon House put together a great show thereby continuing the trend to make exhibits an important element of our symposium. The opportunity to not only listen to papers on "what's new", but also to look at hardware and special materials adds a lot to the symposium.

The Monday night special session on "Engineering Technology and Education in Mainland China" by Dr. J. N. Pettit, president of Georgia Tech, and Eric Herz, general manager of IEEE, was attended by over 300 people and provided to be highly interesting.

The traditional awards banquet was attended by 50% more members and friends that in the past. Since everyone had a great time this is hopefully a new, permanent level of interest. The banquet was indeed very enjoyable and our banquet speaker, Dr. John Nash Ott gave an interesting – suitably controversal talk on the effect light spectral distribution has on behavior patterns, cell growth and tumor formation, as well as muscle responses. In fact, interest was so great that an impromptu continuation of this talk was carried on the following morning.

June Pullara was wonderful in guiding wives and families to the many points of local interest. Her social program gave everyone considerable freedom to see places or to do things that they liked best.

The workshop and specialty conference interest was about double that of prior years. Attendance at the four workshops varied from 60 to over 130. The first Gigabit Logic for Microwave Systems Conference was close to 200.

If you were an attendant in Orlando, I am sure all of this is very familiar to you. If you were not in Orlando – you missed a lot! Why not lay the groundwork right now to make sure that you won't miss next year's symposium in Washington, D.C. Now is the time to think about the paper you will submit or to take other steps to prepare the way for a week in Washington at the 1980 Symposium and Workshops.

SCENES FROM 1979 MTT-S INTERNATIONAL MICROWAVE SYMPOSIUM

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INTERNATIONAL MICROWAVE SYMPOSIUM
WASHINGTON, DC
MAY 28–MAY 30, 1980

FIRST CALL FOR PAPERS

The 1980 IEEE MTT-S International Microwave Symposium theme is "Technology Growth for the 80's." This theme highlights the expected growth of microwaves in the next decade.

Papers are solicited describing original work in the field of microwaves. Material submitted should not have been previously presented or published. The following subject areas are regarded as particularly appropriate for this conference, however all microwave-related papers will be considered.

- Microwave and Millimeter Wave
  - Solid State Devices
  - Integrated Circuits
  - Components and Networks
- Submillimeter Wave Techniques and Devices
- Gigabit Logic Devices and Applications
- High Power Devices and Techniques
- Microwave Ferrite Devices
- Low Noise Techniques
- Microwave Acoustics
- Microwave Communication Systems
- Radiometry and Remote Sensing Systems and Applications
- Microwave Field and Network Theory
- Computer Aided Design and Measurement Techniques
- Microwave Bioeffects
- Integrated Optics, Fiber Optics and Optical Techniques
- Technology Breakthroughs

Authors are requested to submit both a 35 word abstract and a 500 – 1000 word summary (up to 6 illustrations) clearly explaining their contribution, its originality, and its relative importance. Five (5) copies of the abstracts and summaries must be received on or before December 14, 1979 by:

R. C. Van Wagoner
Chmn., Tech. Prog. Comm.
Code 5205
Naval Research Laboratory
Washington, D. C. 20375

Notices of acceptance or rejection will be mailed by January 22, 1980. Authors of accepted papers will receive copyright release forms and instructions for publication and presentation.

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MICROWAVE THEORY AND TECHNIQUES SOCIETY
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Tuesdays 6:30 – 9:30 Sept 25, Oct 2, 9, 16 and 23

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Tuesdays 6:30 – 9:30 Oct 30, Nov 6, 13, 20 and 27

C.A.D.

Tuesdays 6:30 – 9:30 Jan 8, 15, 22, 29 and Feb 5

LOCATION

TRW Building S Cafeteria
1 Space Park, Redondo Beach, Ca. 90278

FURTHER INFORMATION

Dr. Andrew R. Dabrown TRW Systems Phone 536-2206
Leo Mallette HAC Phone 648-1912

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Reg. by 8/1/79	Member	Non-Member
Single Course	$ 60.00	$ 96.00
Three Courses	$160.00	$196.00
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Single Course	$ 75.00	$120.00
Three Courses	$200.00	$245.00

Course	Member	Non-Member
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C.A.D.	☐	☐
Three Courses	☐	☐
Late Reg.	☐	☐

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