



THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

Microwave Theory & Techniques Group
1969 Microwave Prize
to
John D. Rhodes

for a very significant contribution to the field of endeavor of the IEEE G-MTT in his papers entitled "The Stepped Digital Elliptic Filter" and "The Design and Synthesis of a Class of Microwave Bandpass Linear Phase Filters" published in the IEEE Transactions on Microwave Theory and Techniques, Volume MTT-17, No. 4, April 1969.



May 1970

Chairman, G-MTT

Theodore S. Saad
Chairman, G-MTT Awards Committee

1970 International Microwave Symposium

S. SENSIKER, CHAIRMAN, STEERING COMMITTEE

INTRODUCTION

DESPITE shrinking programs and economic difficulties in the microwave field, the 1970 IEEE G-MTT International Symposium was well attended with a total of over 580 registrants. The Newporter Inn, Newport Beach, Calif., provided an ideal location for the Symposium; this setting was enhanced even further by the pleasant weather. If the four-day schedule with many multiple sessions seemed overly long to some, it had the advantage of permitting a wide range of papers and subjects to be presented. The listed technical program was supplemented by several late news items that were added to appropriate sessions.

We were honored by the attendance of Dr. John Granger, President of the IEEE, who delivered the keynote address, a timely and thought-provoking discussion of current problems in our industry. This talk, presented on the opening Monday of the Symposium, was preceded by welcoming remarks by Dr. S. Sensiper, Chairman of the Symposium Steering Committee; H. G. Oltman, Chairman of the Los Angeles Chapter, one of the host chapters; and Dr. J. H. Bryant, Chairman of ADCOM, G-MTT.

Many committee meetings were held during the Symposium, including those of ADCOM and the chapter chairmen.

TECHNICAL PROGRAM

During the four-day Symposium, a total of 92 scheduled papers, including eight invited papers plus eight late news items, were presented in fifteen sessions with three panel discussions on two evenings, providing a very busy program. To accommodate the program it was necessary to arrange for parallel sessions on all but two afternoons.

The panel discussions were well attended as they have been in the past. The nontechnical but important panel discussion led by Dr. J. H. Bryant on Monday evening on the subject "The Engineer, Technology, and Society" held the attention of over 150 persons for the substantial part of the evening. It was evident that several persons attending wished to expand the discussion to include the subject of "The Engineer, Current Economic Status, and Survival," but this topic was not considered appropriate for this panel meeting and was deferred to another time.

The more technically oriented panel discussions on Tuesday evening, one on "The Microwave Engineer and the Computer" chaired by D. Varon, and another on "Applications of Microwave Integrated Circuits" chaired by J. B. Horton, were also heavily attended. The computer session was enhanced by several demonstrations of microwave design via remote time-sharing



Symposium Steering Committee. *First row, left to right:* A. Clavin, W. C. Perry, R. H. DuHamel, S. Sensiper, D. P. Martin. *Second row:* D. Anderson, E. N. Torgow, R. C. Hansen, G. Kasai, N. C. Silence.



Technical Program Committee. *First row, left to right:* A. Villeneuve, D. Adams, A. Wexler, R. Garver, L. Swern, A. Clavin, R. DuHamel, L. Young, P. Coleman. *Second row:* G. Kasai, D. Varon, W. Jones, D. Leeson, H. Chait, G. Haddad, J. Palais, S. Cohn, C. Boyd, G. Matthei. *Third row:* D. Anderson, J. Horton, G. Oltman, E. DuFurt, J. Cacheris, N. Lipetz, A. Bahr, R. Hall, D. Parker, G. Harrison.

computers using temporarily installed access devices. The integrated-circuit panel discussion members covered a wide range of recent advances and demonstrated beyond doubt that this approach to microwave system assemblies is a current practical reality.

The regularly scheduled sessions were well attended and covered a wide range of subjects including not only the more traditional ones of filters and couplers, ferrite devices, millimeter-wave devices, and microwave integrated circuits, but also microwave imaging, Gunn devices, avalanche diodes, and microwave acoustics.

As is customary a number of foreign papers were read at the Symposium by authors from West Germany, Canada, Japan, The Netherlands, France, and Great Britain.

Separate late news items sessions were planned, but since only a few papers in this category were accepted, these were included with the most appropriate regularly scheduled sessions. Also, a "hang-up" session was planned, but apparently the attendants had no unsolved problems (!?!), or at least none they were willing to submit and discuss. Consequently, this innovative idea was not explored.

Since the Digest describes in particular the scheduled papers and participants at the Symposium, and since

many of these papers appear in this TRANSACTIONS, only the late news items papers are listed below.

Session MPM-1: Microwave Filters and Couplers

"Optimum Transmission-Line 90 Degree Directional Couplers," F. Arndt (Technische Hochschule Darmstadt, Institut fur Hochfrequenztechnik, Darmstadt, West Germany).

"A Light-Weight Design of Equalized Filters for Communication Satellite Multiplexers," M. R. O'Donovan, C. M. Kudsia, and S. Singer (RCA Ltd., Montreal, Quebec, Canada).

Session MPM-2: Millimeter Waves

"A 60 to 96 GHz Fast Acting Plasma Waveguide Switch," H. Goldie (Aerospace Division, Westinghouse Defense and Space Center, Baltimore, Md.).

Session TAM-2: Oscillator Noise and Stabilization

"Improvement of a Microwave Discriminator by an Injection Phase-Locked Oscillator," J. R. Ashley (University of Colorado, Colorado Springs) and F. M. Palka (Sperry Microwave Electronics, Clearwater, Fla.).

Session TPM: Microwave Integrated Circuits-II

"Coplanar Waveguide Directional Couplers," C. P. Wen (RCA Laboratories, Princeton, N. J.).

Session WAM-1: Gunn-Effect Devices

"C-Band and X-Band Varactor Tuned Gunn-Diode Oscillators," R. Ruttenberg (Kruse Electronics, Mountain View, Calif.).

Session WAM-2: Guided Waves and Stripline

"A Model Solution of the Microstrip Transmission Line," L. G. Heller (IBM Corporation, Essex Junction, Vt.) and R. E. Post (Iowa State University, Ames).

Session WPM-2: Microwave Acoustics

"Some Effects of Ambient Temperature on Surface Wave Linear FM Correlator Performance," R. A. Kempf, W. S. Jones, and C. S. Hartman (Texas Instruments, Inc., Dallas, Tex.).

DIGEST

The *Digest* retained the now standard 5½- by 8½-inch size and was enhanced by the "Southern California—View from Apollo 9" picture on the cover. Copies should still be available from IEEE Headquarters as IEEE Catalog 70C10-MTT.

SOCIAL FUNCTIONS

As usual the social functions included an old-acquaintance party on the evening before the start of the Symposium as well as a cocktail party prior to the banquet later in the week.

The attendance at the banquet of only 175 people was somewhat less than in prior years, but this number made up in conviviality what it lacked in numbers. Robert Krausz, Master of Ceremonies, kept the banquet attendants in good humor through head-table introductions. Recognition of Symposium committee members,

a brief address, and awards were presented by John Bryant. Leo Young, Past ADCOM Chairman, was presented with a certificate, Richard Damon received the 1969 G-MTT National Lecturer Award, and John Rhodes was presented with the Microwave Prize for two papers in the April, 1969, MTT TRANSACTIONS.

The scheduled banquet speaker, Dr. Harold I. Ewen, unfortunately became seriously ill just prior to the Symposium. However, Prof. Marshall Cohen of the California Institute of Technology, Pasadena, was available as a very adequate substitute and addressed the gathering on "Advances in Radio Interferometry." His talk on the recent progress made in this field was both amusing and informative.

LADIES PROGRAM

The ladies ran a well-organized and well-received program this year with 25 full-time attendants and several others who joined in for a few of the activities.

CONCLUSION

Several arrangements from previous years were either maintained or reinstated. The four-day meeting with parallel sessions and evening meetings is perhaps one of the more controversial items. Pros and cons can be and have been expressed on this matter; perhaps a reasonable compromise is a four-day meeting with fewer parallel sessions and consequently fewer scheduled papers, but with a free afternoon to permit informal interchanges in a more relaxed manner. The inclusion of selected late news items is an excellent idea and worked out very well. The "hang-up" discussion is still considered a good idea and is worth another try.

Despite present difficulties and an uncertain future, it is evident that there is still much vitality and interest in the microwave field. Certainly this year's Symposium, which took as its theme "Microwaves—The Fourth Decade," demonstrated that the past is indeed only a prelude to the future.

The 1970 G-MTT National Lectureship

The G-MTT National Lectureship was initiated in 1967 specifically to provide assistance to chapters experiencing difficulty in planning technical programs by providing a prominent speaker on a current microwave topics. Emphasis is placed on aiding new chapters and small chapters located in areas where speakers are not readily available. The goals established for the National Lectureship are to stimulate chapter growth, provide a greater dissemination of current technical information,

and establish stronger bonds between the chapters and the National Group. A budget of \$2000 per year is provided to cover, or partially defray, the expenses of the National Lecturer. Typically, the National Lecturer will speak at 10–15 chapters during his one-year tenure. Past Lecturers are Richard W. Damon (1969), Leo Young (1968), and Arthur A. Oliner (1967). The 1970 National Lecturer is Harold Sobol, RCA Research and Engineering, Princeton, N. J. The lecture summary follows.