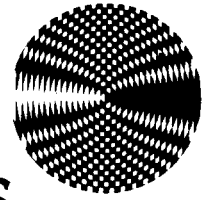




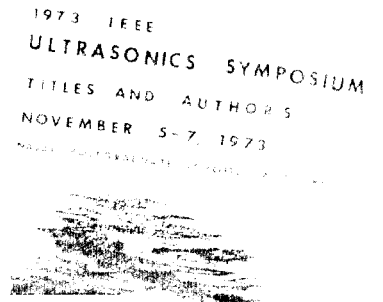
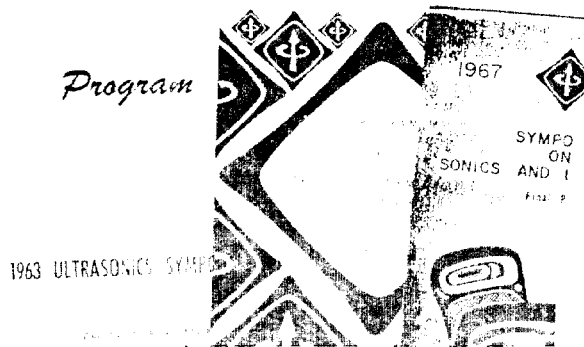
IEEE



# SONICS AND ULTRASONICS GROUP NEWSLETTER

NUMBER 49 - SEPTEMBER 1980

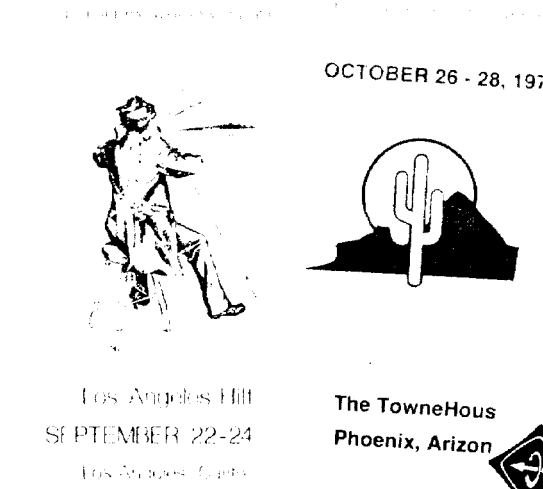
EDITOR: FRED S. HICKERNELL



# 1980 ULTRASONICS SYMPOSIUM

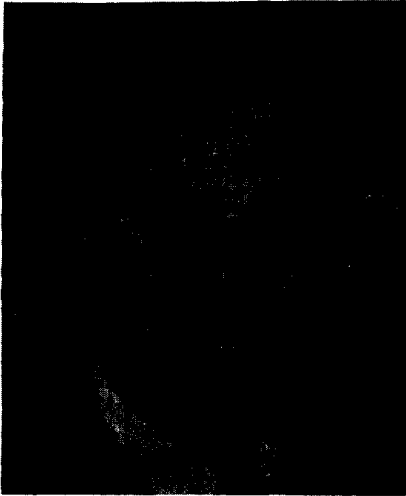
## Boston Massachusetts

### November 5-7



# Meet Your Symposium Committee

## General Chairman



DICK WILLIAMSON

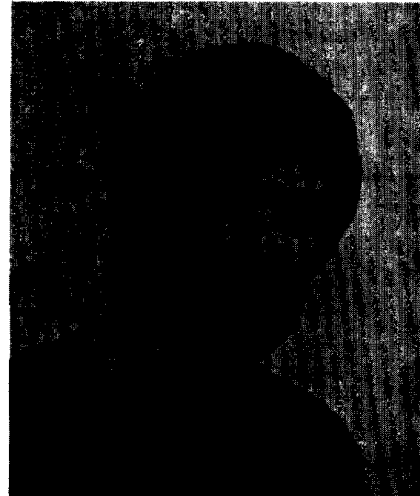
Richard C. Williamson received the B.S. and Ph.D. degrees in physics from the Massachusetts Institute of Technology, Cambridge, in 1961 and 1966, respectively.

In 1970, he joined the staff of M.I.T. Lincoln Laboratory where he has been involved in the development of surface acoustic wave devices for signal processing in radar and communication including reflective array compressors and acoustoelectric convolvers. He became Associate Group Leader for the Surface Wave Technology Group in 1974. In January, 1980, he became Group Leader of the Applied Physics Group which investigates optical signal processing technology.

From 1966 to 1970, while at the NASA Electronics Research Center in Cambridge, MA, he was involved in research programs concerning ultrasonics studies of critical phenomena and phase transitions in ordinary fluids and liquid crystals.

Dick and his expectant wife, Christine, live with their three daughters in the old New England town of Sudbury, MA. Favorite family activities include camping and climbing in the White Mountains. Bicycling, sailing, and carpentry are among his favorite hobbies.

## Technical Program Chairman



HERMAN VAN DE VAART

H. van de Vaart was born in Arnhem, The Netherlands, on April 11, 1934. He received the Ingenieurs degree in applied physics in 1958, and the Ph.D. degree in 1969, both from the Technological University, Delft, The Netherlands.

From 1958 to 1960, he served in the Dutch Army as a Radar Instructor. He joined Transitron Electronic Corporation, Wakefield, MA, in 1960, where he did research on diffusion processes in silicon. Since 1962, he has been with the Sperry Research Center, Sudbury, MA, where he has been concerned with the nuclear quadrupole and ferromagnetic resonances, and with linear and nonlinear phenomena involving spin waves and magnetostatic waves at microwave frequencies in ferrites. More recently, his work has concentrated on magnetic and acoustic surface-wave device studies. He is presently manager of the Signal Processing Department in the Systems Laboratory of the Sperry Research Center.

Dr. van de Vaart is a member of the American Physical Society. He has been chairman of the Awards Committee of the I.E.E.E. Group on Sonics and Ultrasonics since 1973, and acted as Secretary/Treasurer (1970-71) and Chairman (1972-72) of the Boston Section of that group. He has served on the Ultrasonics Symposium Technical Program Committee since 1976, and is presently its Chairman (1980). He is a member of the Society Awards Committee and the Candidate Research Committee of the I.E.E.E. Awards Board.

## Local Arrangements



ALAN J. BUDREAU

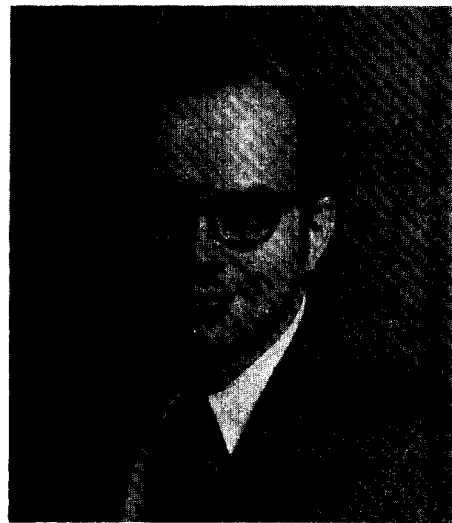
Alan Budreau was born in Miami, FL in 1935, and lived there until he left to attend MIT, where he earned his SB in Physics. He then studied Biophysics, and earned an MA in Medical Sciences at Harvard.

Since 1967, he has been employed as a physicist working with microwave acoustic devices at the Rome Air Development Center Electromagnetic Sciences Division located at Hanscom Air Force Base near Boston, MA. Mr. Budreau has published a number of papers on acoustic materials, devices, and applications. He is currently Chairman of the Boston Sonics & Ultrasonics Chapter.

He has also published in his hobby fields, caving ("spelunking") and scuba diving. He has taught over a thousand divers, and is currently the Harvard University scuba instructor. He has led diving trips to both US coasts, Nova Scotia, and the Bahamas.

His wife, Diana Hughes, is originally from London, England. She and their 2 year old son, Will, have been attending Ultrasonics Symposia for the past 2 years. Will first attended the Cherry Hill Symposium at age 0.3. Diana is in the job placement business. She has helped plan the 1980 Guests' program.

## Finance

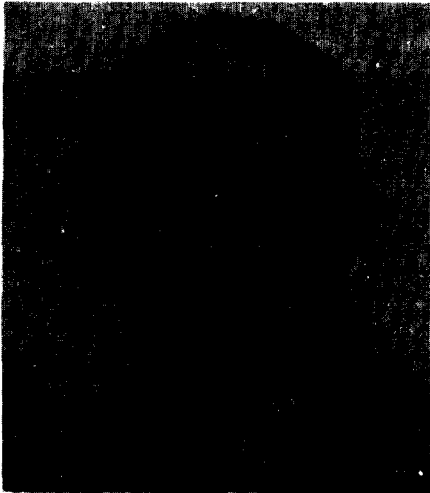


THOMAS E. PARKER

Thomas E. Parker received a B.S. degree (1967) from Allegheny College and the M.S. (1969) and Ph.D. (1973) degrees in Physics from Purdue University. At Purdue his work involved the analysis of acoustoelectric domains in GaAs. In 1973 he joined the Raytheon Research Division to work in the area of surface acoustic wave (SAW) devices. In his initial work at Raytheon he developed a novel phase sensitive laser probe and also discovered the temperature stable composite material made up of SiO<sub>2</sub> on YZ LiTaO<sub>3</sub>. For the last four years he has concentrated on the development of SAW controlled oscillators, particularly in the area of improved frequency stability. He has contributed to the understanding of aging mechanisms and helped bring about the resulting improvement in the long term frequency stability. He was also first to identify surface wave devices as a source of 1/f noise.

Dr. Parker is married and has two children. He enjoys reading and working around the house and yard. He is also active in Scouting and holds a private pilot's license. Dr. Parker is a member of IEEE, Sigma Pi Sigma and Sigma Xi.

## Publications



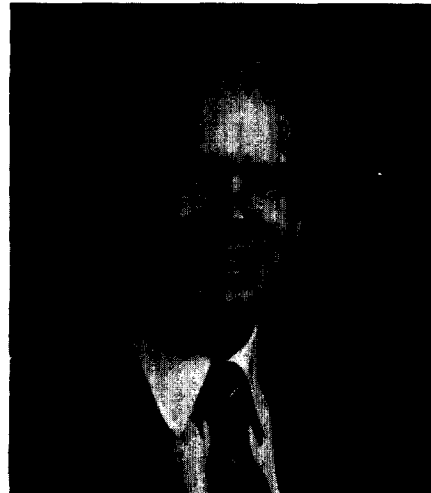
LAWRENCE C. LYNNWORTH

Larry Lynnworth was born in Brooklyn, N.Y. in 1937. He got his BEE from NYU in 1958 and MS from Stanford in 1959. After completing active duty with the Signal Corps, he worked for three years at Avco on developing ultrasonic and dielectric methods for nondestructive testing of ablative heat shield materials. Some pulse-echo experiments were also conducted on composites, one surface of which was ablating while exposed to a plasma jet to simulate reentry.

In 1962, Larry joined Panametrics. He continued to pursue his interest in high temperature ultrasonics in R&D programs aimed at measuring elastic moduli in solids at high temperatures and transport properties in gases and plasmas. Because of his NDT background he sought ways of using ultrasonic techniques in industrial process measurements and control applications at high temperature. He is presently responsible for developing Panametrics' ultrasonic products for the measurement of flow, liquid level, density and temperature. Larry has conducted ultrasonics courses at Northeastern, Louisville and Tufts Universities. He has held elected offices in IEEE, ASTM and ASNT and is a member of Tau Beta Pi and Eta Kappa Nu. He has over 80 publications, over 20 patents, and last year was appointed associate editor-industrial applications for the S/U Transactions.

Larry and his wife Marianne have three children. His hobbies include paddleball, bicycling and miscellaneous construction projects around the house.

## Publicity



LELAND P. SOLIE

Leland Solie was born in Barron, Wisconsin. After two years at North Park College in Chicago, he transferred to Stanford University where he received his B.S. in EE in 1964. After a year of seminary, he returned to Stanford where he received his M.S. and Ph.D. degrees in Applied Physics in 1967 and 1971, respectively. His thesis work, under the guidance of Dr. B.A. Auld, was a theoretical study of surface wave propagation in anisotropic, piezoelectric layered media. This study first predicted the coupling characteristics of a piezoelectric film on a non-piezoelectric substrate as well as the coupling enhancement of a dielectric film over a piezoelectric substrate.

The next two years were spent working at the Norwegian Technical Institute in Trondheim, Norway. Since 1973, he has been at the Sperry Research Center in Sudbury, Massachusetts, where he has invented and developed an acousto-electric convolver with integrated bidirectional amplification, the offset MSC multiplexer, the fanned MSC filter, and the reflective dot array technique for bandpass and dispersive filters.

Leland enjoys photography, cross country skiing, jogging, and gardening. He is active in his church in teaching and choir, and is presently chairman of the congregation. He is a member of Phi Beta Kappa, Tau Beta Pi, and Sigma Xi. He is a past chairman of the Boston Chapter of the Sonics and Ultrasonics Group and is on the Symposium Committee for the 1980 Ultrasonics Symposium.

## 1980 ULTRASONICS SYMPOSIUM TECHNICAL PROGRAM

The 1980 Ultrasonics Symposium promises to be bigger and better than ever. A total of 287 abstracts were received, including 20 invited. This is 38 more than in 1979, and I believe this constitutes an all time record. Of course, bigger does not necessarily mean better, but in this case, I believe it does. The general comments from the Technical Program Committee indicated that the quality of the received abstracts were uniformly high.

The Technical Program Committee met on August 13 to judge and select the papers for presentation, and arrange the Symposium format. Because of the large number of abstracts received, the Committee was forced to go to four parallel sessions. The Symposium is now divided into the opening Plenary session, 37 regular sessions, and 2 poster sessions. A total of 250 papers could be accommodated this way.

This year's Symposium will emphasize several important new topics. Three sessions are devoted to Photoacoustic Spectroscopy and Imaging, including a review session consisting of four invited talks. In addition, there are two sessions on Physical Acoustics, emphasizing non-linear phenomena and attenuation.

A recent hot topic in the SAW field is "convolvers". A total of five sessions have been arranged around this subject. Two sessions will emphasize acoustoelectric devices, two will emphasize elastic convolvers, and one session will be devoted to Signal Processing using these devices.

A dozen papers were received on the subject of Magnetostatic Waves. One regular session will feature a review talk on work going on both in the U.S. and Europe, and emphasize the practical aspect of MSW devices in the contributed papers. Additional papers on this subject will be presented in one of the Poster Sessions.

A larger than usual number of abstracts were received in the NDE area. Five sessions are devoted to Measurements, Systems and Techniques, and one to array and probe transducers. In addition, there will be two sessions on imaging, as applied to both the NDE and medical field, and two sessions entitled: Biophysics.

The remaining sessions will be on various SAW subjects, such as resonators, oscillators, frequency analyzers, propagation, thin films, transducers, filters and materials, as well as on acousto-optics, bulk waves, acoustic microscopy and acoustic sensors.

It may be interesting to note that 34 percent of the abstracts received came from outside the U.S. The Ultrasonics Symposium has truly become an international conference. Also, for the first time, there will be attendees (and two papers) from the People's Republic of China.

I hope that everybody involved in Sonics and Ultrasonics will be able to come to Boston and attend the 1980 Symposium. I am confident that you will agree with me that the Technical Program Committee has put together an outstanding program. I look forward to meeting you there.

H. van de Vaart, Chairman  
Technical Program Committee

### INVITED PAPERS FOR 1980 ULTRASONICS SYMPOSIUM

<u>Author(s)</u>	<u>Affiliation</u>	<u>Title</u>
Hiroshi Takeuchi, Y. Ito S. Jyomura, K. Nagatuma S. Ashida	Central Research Laboratory	New Piezoelectric Ceramics with Zero Temperature Coef- ficients for Acoustic Wave Applications
Prof. J.H. Collins P.M. Grant	University of Edinburgh	A Review of Current and Future Components for Elec- tronic Warfare Receivers

(Continued Next Page)

INVITED PAPERS FOR 1980 ULTRASONICS SYMPOSIUM (CONT'D)

<u>Author(s)</u>	<u>Affiliation</u>	<u>Title</u>
Allan Rosencwaig	Lawrence Livermore Laboratory	Thermal-Wave Imaging and Microscopy
Dr. T.G. Giallorenzi	Naval Research Laboratory	Fiber Optical Sensor Development Invited Paper
C.V. Smith, Jr, J.M. Owens R.L. Carter	The University of Texas at Arlington	Magnetostatic Wave Devices: Microwave SAW?
Ernest Stern	M.I.T. Lincoln Laboratory	The Impact of Convolver Characteristics on System Performance
E.K. Brandis	IBM Corporation	Thermal Wave Microscopy: A New Application of the Scanning Electron Microscope
J.F. McClelland	Ames Laboratory Iowa State University	Condensed Matter Photoacoustic Spectroscopy and Detection Using Gas Phase Signal Generation and Detection
Gordon S. Kino, D. Corl S. Bennett, K. Peterson	Edward L. Ginzton Laboratory Stanford University	Real-Time Synthetic Aperture Imaging System
F.S. Hickernell	Motorola Inc.	ZnO Processing for Bulk-and Surface-Wave Devices
T.W. Grudkowski, M. Gilden G.K. Montress, J.F. Black	United Technologies Research Center	GaAs Monolithic SAW Devices for Signal Processing and Frequency Control
C.K.N. Patel	Bell Laboratories	Opto-Acoustic Spectroscopy of Condensed Matter
J.R. Quinn, P.B. Hildebrand	Electric Power Research Center Spectron Development Laboratory	Recent Material Property Measurements by Acoustic Techniques
T. Lukaszek, A. Ballato	U.S. Army Electronics Technology and Devices Laboratory	What SAW Can Learn from BAW: Implications for Future Frequency Control, Selection and Signal Processing
J.W. Hunt, F.S. Foster M. Arditì	The Ontario Cancer Institute	Acoustic Medical Imaging Through Aberrating Media
A. Zarembowitch, M. Fischer M.A. Breazeale	Laboratoire Recherches Physiques The University of Tennessee	Nonlinear Elastic Behavior and Instabilities in Crystals
S. Dubowsky, T. Morris	University of California	Mechanism Noise
Edwin L. Carstensen	University of Rochester	Non Linear Acoustic Phenomena at Biomedical Frequency and Intensities
H. Gautier, C. Maerfeld	Thomson-CSF	Wideband Elastic Convolver
H.J. Shaw, C. Weinstein L.T. Zitelli, C.W. Frank R.C. Demattei	Stanford University	PVF <sub>2</sub> Transducers
Terry M. Turpin	Department of Defense Ft. Meade, MD	Acousto-Optic Time Integrating Correlators

## 1980 ULTRASONICS SYMPOSIUM ARRANGEMENTS

The 1980 Ultrasonics Symposium will be held at the Boston Park Plaza Hotel on Wednesday, November 5 through Friday, November 7. The hotel is located in downtown Boston, just off the Boston Common and Public Gardens. This year, Boston is celebrating its 350th anniversary and all of old and new Boston are in prime condition to receive visitors. Fall in New England is a special time of year and old Boston town with its many historic sites and fine restaurants has been a favorite site for Ultrasonics Symposia with previous conferences held there in the falls of 1965 and 1972.

The meeting rooms at the Boston Park Plaza Hotel are immediately adjacent to each other which allows convenient "hopping" from one parallel session to another and provides for maximum interaction among symposium participants. On Wednesday and Thursday afternoons, the poster-session format will be used in place of a regular session. Coffee breaks will take place in the Poster-Session room so that papers in the session will have full exposure to all symposium participants.

On the second night of the conference, Thursday, November 6, a cocktail party and New England feast will be held at the magnificent John F. Kennedy Library located at the end of a peninsula jutting into Boston harbor. The evening's festivities will include bus transportation from the Park Plaza Hotel to the library and return, admission to all the exhibits and movies in the library, an open bar, and a full-course dinner. The architecturally unique J.F.K. Library has been reserved exclusively for the Ultrasonics Symposium during the evening of November 6. The cocktail party and feast will be held in the impressive Pavilion of the Library which is essentially a glass cube overlooking the islands of Boston harbor.

An enjoyable guest program has been put together. Events include a get-together breakfast and a walking tour of the Freedom Trail to Boston Common, Old North Church, Paul Revere's house, Quincy Market and other historic sites in the center of old Boston. A trip to Old Sturbridge Village, the cocktail party and New England feast at the J.F.K. Library, shopping in Filene's basement, lunch at Durgin Park, and a Boston Symphony concert will also be part of the program. Bring your family and have a great time!.

### HOTEL

The Boston Park Plaza is readily accessible to all transportation. A block of rooms has been reserved for Symposium participants. Requests must be received by Oct. 14. It is possible that our block may be filled before that. Reservations must be made in writing with the first night's deposit.

### CHILD CARE

Contact Alan Budreau, RADC/EEA, Hanscom AFB, MA 01731 with your requirements.

## GUESTS' PROGRAM

Wednesday morning, Nov. 5 join us at 8 am for a complimentary continental breakfast. You are invited to attend the plenary session before we start on a walking tour of the Freedom Trail, which includes such famous spots as Paul Revere's House, and the Old North Church where the lanterns ("One if by land, two if by sea") were hung to signal the British invasion. We will stop for lunch at one of the colorful local restaurants. In the evening, we hope you will join us to try another one.

Thursday we will leave by van for a day at Old Sturbridge Village, a functioning 150 year old New England Village. Cost for this will be about \$12 including admission and transportation. We will return in time for the cocktail party and dinner at the beautiful J.F. Kennedy Library.

Friday morning join us in fighting the crowds of bargain hunters at Filene's Basement, and lunch at the famous Durgin-Park Market Dining Rooms, where you sit elbow-to-elbow with other (random) guests. At 2 pm visit the sonically excellent Symphony Hall, where Seiji Ozawa will lead the Boston Symphony Orchestra in an all-Bartok program consisting of Piano Concerto No. 2 and Bluebeard's Castle. Let us know if you wish to attend, so that we can try for tickets.

And that is only the beginning of the many points of interest. We encourage you to reserve your room at the Park Plaza through the week-end, thus ensuring that (assuming space is available) you can receive the convention rates. See Cape Cod or the North Shore (Cape Ann) fishing and art colonies. Not to mention Lexington, Concord and Salem. And MIT and Harvard, the latter with a great complex of museums, just across the Charles River in Cambridge.

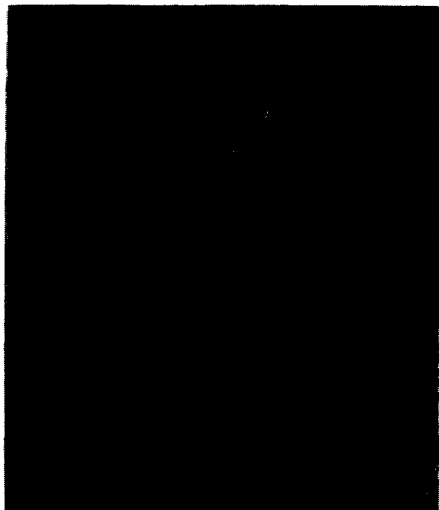
### TRANSPORTATION

Boston's Logan Airport, located 5 km from the hotel, is served by all major airlines. Limousine service to the hotel costs \$3.25. Taxis and car rentals are available. The MBTA provides public transportation; its Arlington Street Station is one block from the hotel, as are major bus terminals. Rail service to Boston's North or South Stations brings the intercity traveler to within 15 minutes of the hotel, depending on the mode of propagation. Once at the hotel, there are several airline offices in the hotel, and both Avis and Hertz offices just across the street.

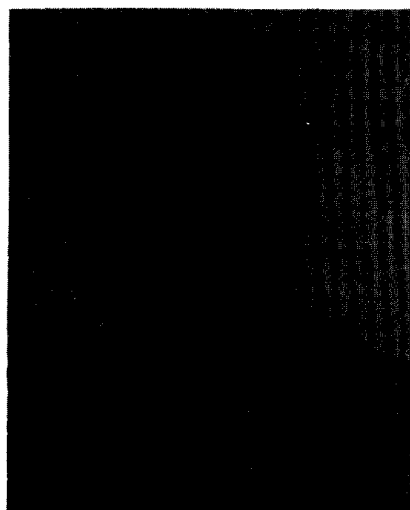
### PARKING

Park Plaza guests may obtain free parking at the Motor Mart Garage just across the street. Others can expect to pay \$3 to \$4 per day there or at nearby lots and garages. Note that street parking is limited to one hour at the parking meters and is strictly enforced.

## Division IV Director — Candidates Schell and Rodrigue



Allan C. Schell  
Director, Electromagnetic Sciences Division  
Rome Air Development Center  
Bedford, Massachusetts



G.P. Rodrigue  
Regents' Professor  
School of Electrical Engineering  
Georgia Institute of Technology  
Atlanta, Georgia

### CANDIDATE STATEMENT

Allan C. Schell

Within the IEEE Board of Directors there are numbers from the regional structure and from the technical structure of the Institute. The Division Directors are the representatives of the Groups, Societies, and Councils to the IEEE Board of Directors. Included in Division IV are AP-S, ED-S, MTT-S, G-SU, CHMT-S, MAG-S, and QEA-S. This fall, there will be an election for Division IV Director, and I am a candidate for that office.

I view the Division Director as an advocate of the interests of the Groups and Societies. This entails promoting those programs that will improve the excellent technical activities that now exist in Division IV. At the same time, new projects must be watched carefully to avoid the introduction of unnecessary costs or interference with adequate existing services.

We are in a period of rising costs, and the budgets of the Groups and Societies are sensitive to publication expenses. With the cooperation of Transaction Editors and G/S Publication Committees, effective control of these costs can be maintained. The trend of the General Fund of the Institute is again downward, and this problem must be addressed, but not by raiding the treasuries of the Groups and Societies. An open assesment of benefits and a careful scrutiny of expenses can lead to a fair apportionment of costs and a minimum of dues increases.

There are within the Groups and Societies a number of innovations that can be shared to improve further their operations. I believe that the Division Director, through regular contact with the Adcoms of the Groups and Societies, can help by exchanging ideas and promulgating lessons learned and other useful information. The Division Director also has the responsibility of reporting to the G/S officers and members Institute matters that are going to impact their activities.



I strongly support an open line of communication and action by officers and members to the IEEE Board. The Groups and Societies of Division IV have demonstrated their willingness and ability to participate in changing the direction of the Institute to better serve their members.

The public perception of engineering leaves a great deal to be desired, and we have not done enough in getting across the positive elements of engineers' contributions. One of the significant steps the IEEE has taken is entry into the American Association of Engineering Societies. Participation in AAES and other intersociety cooperation are constructive means to gain broader support and to reach wider audience on issues affecting the public.

In summary, I believe that the Division Director can serve as an advocate of the interests of the Groups and Societies, and if elected that's what I will try to do.

#### CANDIDATE STATEMENT

G.P. Rodrigue

The primary responsibility of Division Directors is to represent at Board of Directors meetings the interests of the technical Groups and Societies. This structure provides balance with the Regional organization. In order to represent Group/Society interests the Division Directors must be in contact with the members in order to properly fathom their concerns. I'd like to see improved channels of communications among IEEE members, the volunteer officers, and the professional staff. Too many members underestimate the impact that they can have on the direction taken by the IEEE. All members should have readily accessible the information necessary to contact their Board representative as well as IEEE Headquarters.

The Division Directors can also do much to facilitate coordination of activities within the Groups/Societies as well as to exchange information about technical, professional, and educational programs. All Groups and Societies are seeking ways to increase service to their members. Many new programs have been started in Division IV. The Magnetics Society's National Merit Scholarship and the Microwave Theory and Techniques' forthcoming twenty seven year index are two examples. The Electron Devices Congressional Fellow Program and the Distinguished Lecturerships of AP-S and S-MAG could help to improve understanding in somewhat specialized political, technical, and educational areas.

The Groups and Societies in Division IV enjoy a well-deserved reputation for leadership in their respective technical areas. Their strength, which is based on the efforts of volunteers, provides our members with a vital means of maintaining their technical edge through Group/Society publications and participation in conferences and workshops. IEEE's Division organization should facilitate continuing growth of members' technical competence through better coordination of conferences and more attention to subscribers' (and editors') needs in publications.

IEEE should improve communications between its member engineers and the public. More active public relations programs, supplementing the government oriented activities of USAB, are needed to aid mutual understanding of technology and society. The COMAR project now underway to develop an educational film on microwaves is a step in the right direction.

Division IV with its component orientation draws heavily on contributions of engineers, metallurgists, physicists, and chemists. Thus the professional registration question is of particular interest. The IEEE is a volunteer organization of professionals and not in the certification business. I believe that we should avoid a closed ship approach to membership, while at the same time assuring that higher grade members are competent in their area of specialization.

The current financial strength of Societies makes them an obvious target when problems of erosion in the General Fund emerge. All Directors are challenged to seek answers to questions of true costs and benefits in IEEE's operations. We all benefit from IEEE's strength in numbers. By cooperating with the Regional organization we can develop supplemental income for the General Fund. As examples, some items of non-member sales of publications as well as some of the surplus funds generated by technical/regional meetings could be turned over to the General Fund. Such measures should help to hold down the dues increase to members. At the same time the headquarters staff should be encouraged to continue their program of careful project management.

As a volunteer organization most decisions made within IEEE are reached by compromise and consensus. The individual members, the core and strength of the organization, should feel more a part of this consensus formation. As Division IV Director, I would work to improve communications and to represent fully your concerns.

## CHAPTER ACTIVITIES REPORT

It is pleasant to report that there are now four full-fledged S. U. chapters and others considering chapter formation. With our most recent chapter in Palo Alto, California, which Bill Shreve cultivated and was elected its first chairman, we have begun developing the West; the previous three chapters being Boston, Pittsburgh and Washington. It is to be expected that in the next few years that chapters will develop wherever there are genuine concentrations of acoustic work. We would also anticipate that with time the technical basis of the chapters and of new chapters will broaden. Development of individual chapters to date have been largely based on RF signal processing interests, i.e., SAW opto-acoustics and microwave acoustics. The future should see chapters based on combinations of NDE, medical ultrasonics and industrial applications. Beyond the value of the strong nationally sponsored Technical activities of the SU administrative committee, local chapters provide an interface to present and potential members not available by other means. Though in some areas there is already a local cohering influence such as the program activities of a strong educational or industrial concern, this is not universally true. A strong chapter program series can provide a local basis for communicating among members and professional associates who otherwise would see each other only at national meetings.

Chapter chairmen are urged to attend SU Administrative Committee meetings to be sure the needs of their groups receive proper attention. Chapter chairmen whose names are on file with the Administrative Committee (by mailing time) will receive invitations to the Administrative Committee meetings.

Now is the time that chapters should be completing their program schedules. Chapter program chairmen should be aware of our new National Lecturer, Dr. Richard C. Williamson, MIT Lincoln Laboratories, who is available to speak on "Surface Acoustic Wave Signal Processing in a Digital Age". Both because of the timeliness of his subject and the skill with which he presents it, Dick should be contacted early to arrange for his program at your chapters. He can be reached by phone (617) 862-5500 X5334, or by writing Room C-317, MIT Lincoln Laboratory, P.O. Box 73, Lexington, Mass. 02173.

Persons living in the areas served by our present chapters are encouraged to contact the officers directly for information on their activities. The chairmen for 1980-81 are:

BOSTON: Mr. Alan J. Budreau, RADC/EEA,  
Mail Stop 30, Hanscom AFB, MA  
01731. (617) 861-3768

PALO ALTO: Dr. W.R. Shreve, Hewlett-Packard  
Labs., 1501 Page Mill Road,  
Palo Alto, CA 94304  
(415) 857-2664

PITTSBURGH: Mr. B.R. McAvoy, Westinghouse R&D  
Laboratory, 1310 Beulah Road,  
Pittsburgh, PA 15235  
(412) 256-7267

WASHINGTON: Dr. Kenneth Davis, Code 6853,  
Naval Research Laboratory,  
Washington, D.C. 20375  
(202) 767-3008

Persons interested in chapters or joint chapter possibilities in other areas are invited to contact the writer, (301) 765-7287, Westinghouse Defense and Electronic Systems Center, P.O. Box 1521, MS 3717, Baltimore, MD 21203.

Robert A. Moore  
Chapter Activities  
Coordinator

\* \* \* \* \*

### WELCOME TO NEW G-SU CHAPTER

#### SANTA CLARA VALLEY

The newest addition to a hopefully growing list of new chapters is located in the San Francisco Bay area. Approval was recently obtained for a G-SU chapter associated with the Santa Clara Valley Section of the IEEE. There are 103 G-SU members in the area and a potential for a strong group. Bill Shreve, the newly elected chairman of the group, reports a strong interest in medical ultrasonics followed by SAW, microwave and physical acoustics. The first chapter meeting is scheduled for Tuesday, October 21st, at Stanford Medical Center, 7:30 in the evening. A talk will be presented by Thomas Anderson and Douglas Pounds entitled "Ultrasonic Hyperthermia of Deep Seated Tumors", followed by a tour of the treatment facility.

For further information on the activities of the group contact any of the following officers:

William R. Shreve, Chairman  
Hewlett Packard 28C  
1501 Page Mill Rd.  
Palo Alto, CA 94304  
(415) 857-2664

David L. Hecht, Vice-Chairman  
ITEK Corporation  
Applied Technology Division  
645 Alamore Avenue  
Sunnyvale, CA 94086  
(408) 732-2710 x2512

John Larson, Secretary-Treasurer  
Hewlett Packard 28C  
1501 Page Mill Rd.  
Palo Alto, CA 94304  
(405) 857-2930

Our best wishes to the officers and the group for a very successful program.

SU TRANSACTIONS

Authors are reminded to review the "Statement to Contributors" on the back cover of the Transactions. By following the instructions for manuscript submittals, the returning of papers which are not in the proper form will be minimized and publication will be speeded up.

Authors are also asked to review the technical areas and their respective Associated Editors on the inside of the front cover for proper mailing of the manuscripts. A new technical area is titled "Acoustic-Acousto Optic Sensors". This is an area that is rapidly becoming a technique useful in sensor detection of temperature, position, pressure, strain etc for a variety of commercial and military applications.

There will be some free samples of our Transactions available for non-members at the 1980 Ultrasonic Symposium.

The MMT/SU joint "Special Issue on SAW Applications" will not be published in November 1980 but will appear sometime in 1981.

Stephen Wanuga  
Editor, Transactions on  
Sonics and Ultrasonics

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JOINT SU-MMT SPECIAL ISSUE DELAYED

The joint SU-MMT special issue on SAW applications will not be published in November 1980 as originally planned. Authors will be notified as soon as a new date is set.

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AWARD TO MARTIN GREENSPAN

Martin Greenspan will be honored at this years symposium and receive the IEEE Harry Diamond Award for contributions to the fields of acoustics and elasticity. The presentation will be made by Lawrence K. Anderson, Division IV Director, at the start of the Plenary Session. Our congratulations to Martin Greenspan on this award. He is retired from the National Bureau of Standards.

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ACHIEVEMENT AWARD NOMINATIONS

Nominations are invited for the Sonics and Ultrasonics Achievement Award. This award is made aperiodically to an individual who has made outstanding contributions to or technical achievements in the field of Sonics and Ultrasonics. The award consists of a certificate, plaque and \$1000. The first recipient of this newly established award was John de Klerk of Westinghouse. Those wishing to make nominations should contact the chairman of the G-SU Awards Committee, Herman van de Vaart, Sperry Research Center, Sudbury MA 01776, (617) 369-4000, x309.

FUTURE MEETINGS

1981 CHICAGO October 14, 15, 16

McCormick Place  
General Chairman L.W. Kessler  
Sonoscan, Inc.  
530 E. Green St.  
Bensenville, IL 60106  
(312) 766-7088

1982 SAN DIEGO October 27, 28, 29

Town and Country Hotel  
General Chairman B.R. McAvoy  
Westinghouse R&D Ctr.  
1310 Beulah Road  
Pittsburgh, PA 15235  
(412) 256-7267/3595

1983 ATLANTA October 31, November 1,2

Mariott Hotel  
General Chairman M. Levy  
Department of Physics  
University of  
Wisconsin-Milwaukee  
Milwaukee, WI 53201  
(412) 963-4474/4168

1984 DALLAS-FT. WORTH

1985 SAN FRANCISCO AREA

1986 WILLIAMSBURG, VIRGINIA

1987 ORLANDO, FLORIDA

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PROCEEDINGS NEWS

Steps are being taken to improve the 1980 Ultrasonics Symposium Proceedings. Lightweight paper stock has about doubled in cost over the past several years and is not available in quantity. For this reason a heavier stock was used for the 1979 Proceedings. The "perfect binding", a flexible glue, apparently is not stable for volumes of this size. This year's Proceedings will have a sewn binding and stronger covers.

The cost of the 1980 Proceedings to symposium attendees is \$24 for a softbound copy and is part of the registration fee. In addition microfiche is available at the same cost and hardbound copies ordered at the symposium will be \$34 each. We will make every effort to have the soft bound Proceedings in the mail by the middle of January 1981.

B.R. McAvoy  
Proceedings Editor

G-SU AD-COM BRIEFS

The following are highlights of activities discussed and actions taken at the spring, 1980 G-SU Ad Com meeting which was held March 11th in Chicago.

G-Su President G.A. Alers (University of New Mexico) opened the meeting. He introduced I. Engelson (IEEE), the new Director of Technical Activities at IEEE HQ, who was available throughout the meeting and actively participated in many of the discussions which concerned IEEE, G-SU and finances.

W.D. O'Brien, Jr. (University of Illinois), G-SU Secretary-Treasurer, pointed out that the group's financial condition remains strong with sufficient reserves to consider the initiation of new programs aimed at the benefit of G-SU members. Year end financial condition for 1979 yielded a \$5.6K surplus (\$128,4K income and \$122.8K expenses) with total reserves at approximately \$100K.

An "IEEE - Sonics and Ultrasonics Group National Lecturer Program" was approved. Dr. Richard C. Williamson, Lincoln Laboratory was recommended and approved to be the first (1980-1981) National Lecturer. The subject would be "Surface-Acoustic-Wave Signal Processing in a Digital Age". The selection committee included the membership chairman R.B. Thompson (Rockwell International), awards chairman H. van de Vaart (Sperry Research Center) and chapters chairman R.A. Moore (Westinghouse Defense and Electronics System Center).

The awards committee chairman, H. van de Vaart proposed and received approval for a "Sonics and Ultrasonics Achievement Award". This award will honor any individual for his/her outstanding contributions to or technical achievements in the field of Sonics and Ultrasonics. The prize includes a certificate, a plaque and \$1000. Nominations are invited from the G-SU membership for annual consideration. The award will be presented aperiodically.

Dr. John de Klerk, Westinghouse Research Laboratory was approved as the first recipient of the "Sonics and Ultrasonics Achievement Award". The award will be presented at the 1980 Ultrasonics Symposium in Boston.

L.W. Kessler (Sonoscan) presented a feasibility study which assessed the financial viability of G-SU developing and publishing a trade journal aimed at the ultrasonics community with articles detailing the "nuts and bolts" problems which ultrasonic engineers face. There would be a fairly expensive start-up cost. No action was taken. Discussion will continue at the next Ad Com meeting.

With almost 400 student members of the G-SU, an ad hoc committee consisting of K.M. Lakin (University of Southern California) and G.W. Farnell (McGill University) is examining the feasibility and details of a Student Paper Contest or some other type of support for students.

Additional funds were approved to continue the advertising campaign in various scientific and trade journals to attract attention to and attendance at the Ultrasonics Symposium. E.P. Papadakis (Ford Motor Company) is responsible for this activity. Also, F.S. Hickernell (Motorola Government Electronics Division), Newsletter Editor reported the establishment of advertising rates for the Newsletter: \$500 for a full page, \$250 for a half page and \$125 for a quarter page.

Transactions Editor S. Wanuga (General Electric Company) discussed some problems common to all IEEE publications, such as foreign manuscripts, for which the IEEE Publications Board has been seriously examining various solutions. Also reported: that the 1979 volunteer page charges were good, 476 pages were published in 1979, 512 pages are budgeted for 1980 including a special issue on "SAW Applications" and various changes in Associate Editors.

Meetings chairman B.R. McAvoy (Westinghouse Research Laboratory) announced the future Ultrasonic Symposium locations:

October 14-16, 1981 in Chicago; October 27-29, 1982 in San Diego; October 31-November 2, 1983 in Atlanta; October, 1984 in Dallas; 1985 in San Francisco or Portland; 1986 in Williamsburg and 1987 in Orlando.

The next G-SU Ad Com meeting is scheduled for November 5, 1980, during the 1980 Ultrasonics Symposium in Boston.

W.D. O'Brien, Jr., G-SU Secretary-Treasurer

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