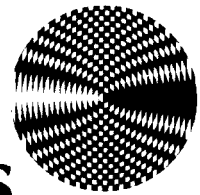




IEEE

SONICS AND ULTRASONICS GROUP NEWSLETTER



NUMBER 53, SEPTEMBER 1982

EDITOR: FRED S. HICKERNELL



1973 IEEE
ULTRASONICS SYMPOSIUM
OCTOBER 1-4, 1973
AT THE RITZ-CARLTON HOTEL
WASHINGTON, D.C.

1982 ULTRASONICS SYMPOSIUM

**San Diego, California
October 27-29**



1969
ULTRASONICS
SYMPOSIUM

Chase Park Plaza
St. Louis, Miss
Sept. 24-26, 1971

STATLER HILTON
NEW YORK
SEPT. 25-27

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of the
Institute of Electrical and Elec

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1970 IEEE ULTRASONICS SYMPOSIUM



Los Angeles Hilton
SEPTEMBER 22-24
Los Angeles, Calif.

1971 IEEE ULTRASONICS SYMPOSIUM

OCTOBER 26 - 28, 1971



The TowneHouse
Phoenix, Arizona



1974 IEEE ULTRASONICS SYMPOSIUM
NOVEMBER 11-14, PEISTER HOTEL MILWAUKEE WISCONSIN



IEEE 1982 ULTRASONICS SYMPOSIUM

AN INTERNATIONAL SYMPOSIUM

SAN DIEGO, CA OCTOBER 27, 28, 29



General Chairman

B. R. McAvoy
Westinghouse R&D Center
1310 Beulah Road
Pittsburgh, PA 15235
(412) 256-7267 or 3595

Technical Chairman

R. S. Wagers
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P.O. Box 225936
Dallas, TX 75265
(214) 238-4619

Finance Chairman

Bob Potter
1710 Columbia Drive
Richardson, TX 75081
(214) 995-2823

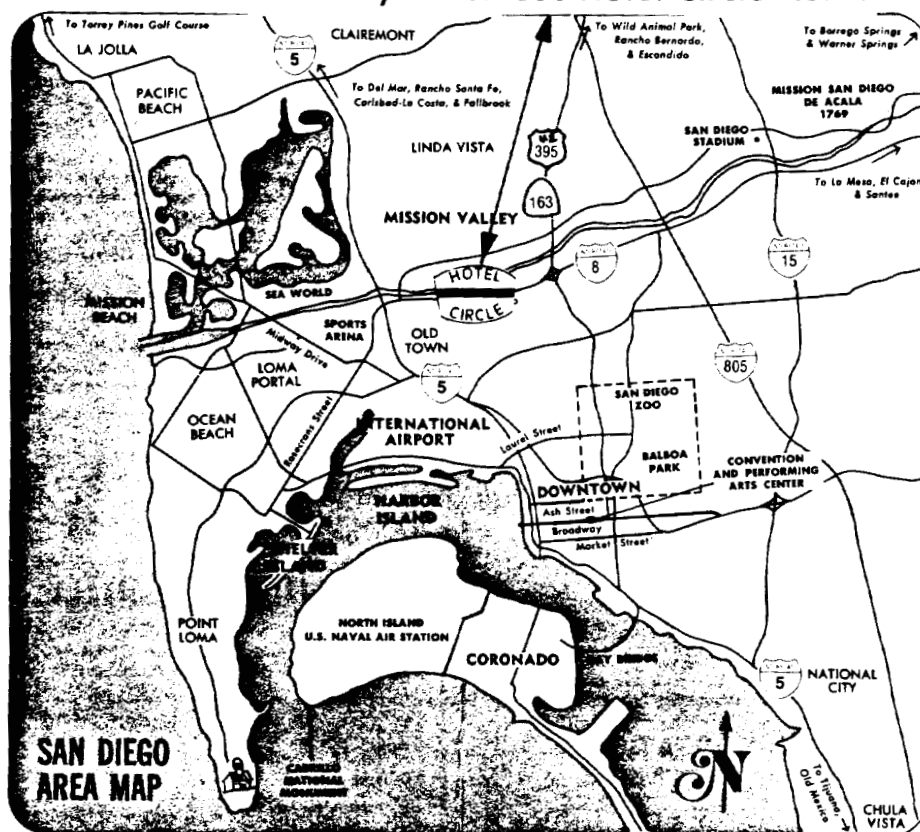
Local Arrangements

Harper Whitehouse
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R. C. Badewitz
Cubic Defense Systems
9333 Balboa Ave.
San Diego, CA 92123
(714) 277-6780

Town and Country Hotel 500 Hotel Circle North



A WORD FROM THE PRESIDENT

The 1982 IEEE Ultrasonics Symposium is upon us. Bruce McAvoy, Bob Wagers and their committee have worked hard to provide one of our best symposia. More papers than ever have been contributed which, while making the selection process by the Program Committee even more difficult, offers a high quality, wide selection technical program. The three day, intensive, international meeting brings together experts from around the world (typically around 30 countries) to discuss such topics as medical imaging, tissue characteriza-

tion, nondestructive testing, acoustic microscopy, hyperthermia technology, fabrication technologies, acousto-optics, propagation phenomena, new development in SAW/semiconductor devices, anisotropic crystals, diode acoustic devices and acousto-electric signal processing devices. Mark your calendar: October 27-29, 1982 at the Town and Country in San Diego.

William D. O'Brien, Jr.
President G-SU

Ultrasonics Symposium

Technical Program: Contributed and invited papers on discoveries, recent advances, new devices, new techniques and applications are planned in the following areas:

Acoustic Emission
Acoustic Microscopy
Acousto-Electric Effects and Devices
Acousto-Optic Effects and Devices
Acousto-Optic Signal Processing
Arrays and Beam Steering
Bioeffects and Biophysics
Bulk Wave Effects and Devices
Defect and Material Characterization
Industrial Ultrasonics
Piezoelectric and Ferroelectric Materials
Inverse Scattering
Hyperthermia
Magnetostatic Waves and Devices
Medical Ultrasonics
Nondestructive Evaluation
Photoacoustics
Physical Acoustics
SAW Filters and Transducers
SAW Materials and Propagation
SAW Resonators and Oscillators
SAW Signal Processing
SAW System Application
Thin Film Acoustic Technology
Tissue Characterization
Sensors
Porous Media

The following invited speakers will participate in the Technical Program:

Presidential Speaker:

L.A. CRUM, University of Mississippi --
Acoustic Cavitation in Liquids.

Invited Speakers:

NORMAN BERG, Harry Diamond Laboratory --
Single- and Multi-Dimensional Acousto-Optic
Time Domain Signal Processing.

CHARLES CAIN, University of Illinois --
Hyperthermia.

DAVID WILSON, SRI International -- Trends
in Medical Ultrasonic Imaging.

ANTHONY DEVANEY, Schlumberger-Doll Research --
Inverse Source and Scattering Problems in
Ultrasonics.

K. SALAMA, University of Houston -- Measure-
ments of Residual Stresses Using the Temper-
ature Dependence of Ultrasonic Velocity.

JOHN BOWERS, Stanford University -- Noncon-
tacting Sensors for Acoustic Waves.

ERIC FURGASON, Purdue University -- Optimal
Operation of Ultrasonic Correlation Systems.

R.L. THOMAS, Wayne State University -- Appli-
cations of Photoacoustic Techniques to Non-
destructive Evaluation and Imaging.

GERD BUSSE, Zentrale W.E. Physik -- Nonde-
structive Evaluation and Imaging with
Optically Generated Thermal Waves.

G.S. CARGILL, IBM Thomas J. Watson Research
Center -- Electron-Acoustic Microscopy.

NABIL AMER, University of California -- Novel
Approaches to Photothermal Spectroscopy and
Imaging.

C.E. YEACK, IBM Thomas J. Watson Research
Center -- Transient Photoacoustic Techniques
as a Means of Monitoring Laser Drilling.

THOMAS PLONA, Schlumberger-Doll Research --
Acoustic Properties of Fluid-Saturated
Porous Media.

SUSAN C. SCHNEIDER, Marquette University --
Ultrasonic Investigation of the Ferromagnetic
Superconductor: ErRh_4B_4 .

K.M. LAKIN, Iowa State University -- Thin
Film Resonators and Filters.

E.G.S. PAIGE, University of Oxford, England --
Reflection of Surface Acoustic Waves by
Thin Metal Dots.

THOMAS PARKER, Raytheon Research Division --
Precision Surface Acoustic Wave (SAW) Oscil-
lators.

ROBERT ROSENBERG, Bell Laboratories -- Opti-
cal Fiber Repeatered Transmission Systems
Utilizing SAW Filters.

S. REIBLE, MIT Lincoln Laboratory -- Wide
Band Analog Signal Processing With Super-
conductive Circuits.

A record number of abstracts were received for this year's Ultrasonics Symposium. Of these 315 abstracts we were able to accommodate 259 presentations. To allow this many papers to be presented, though, required expanding the poster sessions somewhat and having four parallel sessions three times during the meeting. Fortunately, the four subjects presented in parallel are sufficiently orthogonal that attendees should not have to choose between two concurrent sessions both of which are of interest to them. The sessions are conveniently arranged on one floor in spacious rooms adjacent to one another.

Similarly convenient are the entertainment and sightseeing activities in the San Diego area. While you are in San Diego plan to take advantage of these opportunities.

See you in San Diego.

Robert W. Wagers, Chairman
Technical Program Committee
1982 IEEE Ultrasonics
Symposium

Meet Your Symposium Committee



BRUCE McAVOY

GENERAL CHAIRMAN

Bruce McAvoy has been the Editor and formerly the Co-editor with John de Klerk of the Ultrasonics Symposium Proceedings since 1976. He is currently the group leader of Microwave Acoustics at the Westinghouse R&D Center in Pittsburgh, PA, having been active in the area of SAW and bulk mode devices since 1972. He has published over 30 papers in the microwave field concerning effects in bulk and junction semiconductors in addition to microwave acoustics. Currently his work includes new designs and processing techniques for microwave bulk mode delay lines, high overtone bulk mode resonators and a study of the effects of magnetostrictive films on SAW propagation for device applications. He holds 7 patents in these areas.

Bruce has served as the Meetings Chairman of the Group from 1975 to 1981 and is also Chairman of the Pittsburgh Section on Sonics and Ultrasonics. In 1981 he joined the Meetings Committee of the Technical Activities Board of the IEEE as Division IV representative. He also is a member of the Institute-wide Ad Hoc Meetings Committee which is dealing with problems in major conventions.

Editor's Note: A General Chairman of a major IEEE conference puts in hours and hours of donated time with little compensation for his efforts. Bruce goes above and beyond with his editorial activities, positive contributions on the Ad Com and support of the Newsletter. If you see mild mannered Bruce walking the corridors, give him a word of thanks. Also you might check, I think he has on an undershirt with a big "S" emblazoned on the front.



BOB WAGERS

TECHNICAL CHAIRMAN

Bob Wagers is Manager of the Surface Acoustic Wave Devices Branch of the Central Research Laboratories at Texas Instruments Incorporated and is a Senior Member of the Technical Staff. Previously at Texas Instruments he was Manager of the CCD Imaging Systems Branch (1977-1978) and a Member of the Technical Staff (1972-1976) of the Surface Acoustic Wave Devices Branch. He is author of about 35 technical publications, holds 8 U.S. patents, and has 5 patents pending.

Prior to joining Texas Instruments, Dr. Wagers held research assistant positions at Stanford University, was a Rhodes Scholar at Oxford University, England (1966-1967), and during the Fall of 1976 was Assistant Professor of Electrical Engineering at Princeton University.

Dr. Wagers is currently associate editor of the IEEE Transactions on Sonics and Ultrasonics and a standing member of the Awards Committee for G-SU. Since 1976 he has served on the Technical Program Committee and chaired a number of sessions of the Ultrasonics Symposium.

Outside of the lab Bob spends his time water-skiing, working on dozens of home engineering activities, and reading from a spectrum of nonengineering sources.

Symposium Committee



BOB POTTER

FINANCE CHAIRMAN

Bob R. Potter was born in Salina, Oklahoma on August 27, 1941. He received the B.S. degree in Electrical Engineering from California State University at Long Beach in 1967 and the M.S. degree in Electrical Engineering from Brigham Young University in 1970.

From 1970 to 1972 he was with General Dynamics in San Diego, California, where he did clutter modeling for MTI radar. From 1972 to 1973 he was with Varian Associates in Palo Alto, California where he performed research on traveling wave tubes. Since 1973 he has been with the Corporate Research Laboratory of Texas Instruments in Dallas, Texas where he has been involved in research and development of Acoustic-Surface-Wave devices. Highlights of the SAW work have been Low Loss Filters both at UHF and L-Band frequencies and slanted correlators for pulse compression and broadband delay lines.

In his spare time Bob is a Bishop in the Mormon Church, plays basketball and enjoys vacations to Hawaii every other year.

* * * * *

Support for the 1982 Ultrasonic Symposium is also coming from the following San Diego area residents:

Harper Whitehouse
Naval Ocean Systems Center

Jim Alsup
Naval Ocean Systems Center

R.C. Badewitz
Cubic Defense Systems

SPEAK SPANGLISH?

For most people of Mexican ancestry along the Mexican-American border, it is easy to slip into either English or Spanish as it is to clear a pocket calculator. But sometimes the button gets stuck.

The result is Spanglish.

The rules of grammar seem to go something like this: If you can't think of the Spanish word, pick an English one and add a vowel appropriate to gender, as in "car-ro," for car. An additional rule would be: If you can't think of the Spanish verb, put a Spanish conjugation on the end of an English one and change the spelling a little, such as "parquear"-"parquear carro" -- park your car.

If you had a headache you would want an "aspirina" and so you would go to the "farmacia" which has all kinds of "drogas." If it were lunchtime you order "un hamburger y Coke." So far so good. Now try this: "Ya estufas" which translates roughly to "already stoves" but means "stop." Or "ponte trokas," which says, "make yourself into a truck" but it means "be alert." These are street slang expressions which have been accepted into the dialect and are a challenge to the powers of comprehension.

Spanglish also cuts a few corners from the ultra-polite Castilian Spanish by following the more direct American syntax and more informal style of address. Examples are: "creo que si" which means "I think so" is now simply "creo si" and the expression "so-so" was said "asi, no mas" (so, no more) but now "asi'asi" is used. Idiomatic expressions also are transformed: "Don't get carried away" is said "no se aviento" (don't get blown away) and "no way" is simply "nil" (nothing).

There is not much new in all of this; the way we express ourselves is always changing. In the days when Texas still was part of Mexico an Indian tribe near El Paso could not pronounce the word "Mejicano" (May-he-cahno) and said it "Mechicano." The name was subsequently shorted to "Chicano."

It is a good idea to refer to persons of Mexican ancestry on the American side of the border as Mexican-Americans until you find out their preference about ethnic labels. Chicano, which the younger people use freely, is not popular among the older generations. A number of Mexican-American communities find "Hispanic" repugnant, even though a number of federal agencies insist on using it.

We hope you enjoy your stay in the San Diego area. You may already know the language. We invite you to know the brilliant and colorful people who are part of it.

B. R. McAvoy
General Chairman
1982 Ultrasonics Symposium

Chapter Activities Reports

BOSTON CHAPTER

The Boston Chapter finished the 81-82 season with talks by James Sethares of Rome Air Development Center (RADC) on magneto-static-wave delay lines, and Robert Spindel of Woods Hole Oceanographic Institute on ocean acoustic tomography. Talks for the new season are currently being arranged. On November 17th, Frank Barber, the G-SU National Lecturer, will present his talk on "Ultrasonics in Medical Diagnosis and Biomedical Research." The December meeting will be a joint meeting with the MTT and Magnetics groups. Douglas Adam of Westinghouse Research Center will speak on the topic of magnetostatic-waves. Early in 1983, Richard Webster of RADC and Donald Lee of the University of Maine will be speakers.

New officers were elected in May and are listed below:

Thomas E. Parker, Chairman
Raytheon Research Division
(617) 863-5300 X3084

James Sethares, Vice Chairman
RADC/EEA
(617) 861-4663

Paul L. Meyer, Secretary-Treasurer
Sperry Research Center
(617) 369-4000

Thomas E. Parker
Chapter Chairman

SANTA CLARA VALLEY

There are about 220 members on the mailing list in the Bay Area this year. Meetings at 8:00 p.m. on the third Wednesday of every month, starting in September are held. We have tentatively scheduled a series of nine lectures for the coming year, starting with National Lecturer Dr. Frank Barber on September 22, speaking on "Ultrasonics in Medical Diagnosis and Biomedical Research." Talks are then planned to cover medical areas such as Doppler ultrasound, eye imaging, and hyperthermia, and non-medical areas such as SAW devices, magnetostatic waves, fiber optics, and acoustic microscopy. We are also hoping to arrange a talk related to starting your own business in an ultrasonics-related area.

The officers for this year will be Dr. David A. Wilson of SRI International as Chapter Chairman, Dr. John D. Larson as Vice Chairman, Dr. William R. Shreve as Secretary-Treasurer (both of HP). For further information on meetings the chairman may be contacted at (415) 859-4918.

David A. Wilson
Chapter Chairman

LONG ISLAND CHAPTER

Formal elections of chapter officers were conducted in March 1982 with the following results for officers through June 1983:

Chairman: Herbert R. Carleton
College of Engineering and
Applied Sciences
State Univ. of New York
Stony Brook 11794
(516) 246-5980

Vice-Chairman: Richard LaRosa
Hazeltime Corporation
Greenlawn, New York
(516) 261-7000, X2321

Secy/Treas: Jay Parekh
Dept. Electrical Engineering
SUNY - Stony Brook, NY 11794
(516) 246-7760

Program
Chairman: Bernard Smilowitz
Airborne Instruments Lab
Walt Whitman Road
Melville, New York 11746
(516) 595-4358

A meeting of the chapter EXCOM was held on April 25, 1982 at which the four chapter officers were present. Because of the common interests of MTT it was decided to place them on the mailing lists for meeting notices. It was decided that meetings should be held at Poly - Melville if possible for the convenience of attendees. A discussion of the possibility of offering a tutorial in ultrasonics was discussed and tabled until next EXCOM meeting.

The following technical meetings were held during the year:

Sept. 23, 1981 R.C. Williamson, "Surface Acoustic Wave Signal Processing in a Digital Age" (Joint Session Meeting).

Nov. 12, 1981 L. Kessler, "Acoustic Microscopy: Methods, Applications, Outlook."

June 21, 1982 R.W. Freyre, "A Bragg Cell Optical Heterodyne Channelized RF Receiver."

In November the P.G.S.U. National Lecturer, Frank Barber will be speaking.

The Chapter presently has 18 members. There were 36 in attendance at the June 21 talks by Dr. Freyre of Hazeltime.

Herbert R. Carleton
Chapter Chairman

WASHINGTON-BALTIMORE-VIRGINIA CHAPTER

During this past year, the Washington-Baltimore-Virginia Section of the Sonic/Ultrasonics group hosted three dinner meetings in the Washington suburbs. In January, Professor Robert E. Green, Jr. of Johns Hopkins University discussed "Some Innovative Techniques for Nondestructive Evaluation of Materials." Professor Green included work on mechanical deformation processes during fatigue testing and acoustic emission detection by laser beam interferometry in a well received presentation.

In March, Dr. Lawrence Kessler of Sonoscan, Inc., the SU National Lecturer for this past year, presented an interesting overview of many applications for acoustic microscopy. Comparisons with optical techniques showed both the advantages and limitations of high frequency ultrasonic techniques.

In May, Dr. Dickron Mergerion and Mr. Thomas Lisle of Westinghouse Defense and Space Center in Baltimore, MD jointly presented "Optical Signal Processing and Its Interface Problems." Applications to spectrum analyzers, convolvers, and correlators were included, and generated an enthusiastic question and answer period following the formal presentation.

Those interested in attending meetings for the coming year may contact C. Vale, Westinghouse Electric Corporation, Baltimore, (301) 765-3267.

G.V. Blessing
Chapter Secretary

CHAPTERS COORDINATOR REPORT

It has been a pleasure to participate in the growth of Chapter activities over the past few years. This development has required both strong local interest and leadership and increased SU Administrative Committee support. Any local chapters or individual membership having suggestions of how SU Administrative Committee support could be improved, should transmit them to the appropriate Administrative Committee member. The national lecture program is the result of the need for chapter speaker support. This has been an extremely well received program with numerous IEEE and University programs being given as well as to chapters. The broad acceptance clearly indicates the value of this program in particular and also the value of programs which can come as a result of chapter suggestions.

Some months ago, we sent our inquiries of interest in chapter organization to a number of persons conducting ultrasonics activities outside of the U.S. To date, we have received several inquiries for additional information and expressions of interest on which we will confer during the

San Diego meeting. Anyone in the U.S. or outside wishing to consider organizing a chapter should contact the author at any time -- at the San Diego meeting or at my regular location (301) 765-4027; Westinghouse Defense and Electronics Center, P.O. Box 746, MS 296, Baltimore, MD 21203. Half of our present chapters were originally organized around university environments. Perhaps other university centers can serve as a nucleus for chapters in other locations.

Anyone desiring activity with any of our present chapters should contact them directly as indicated in their reports. For information on the Irvine Chapter contact Dr. Chen S. Tsai (714) 833-5144 at the University of California, Irvine, CA. For information on the Pittsburgh Chapter contact Bruce McAvoy, Westinghouse R&D Center, Pittsburgh, PA. (412) 256-7267.

Robert A. Moore
Chapters Coordinator

* * * * * MEMBERSHIP

The Sonics and Ultrasonics Group membership is currently just above 2,000, an increase of about 4% from the same time last year. Our rank growth among the 29 IEEE societies is 11th. These statistics are encouraging; however, we believe that the wide applicability of sonic and ultrasonic methods to science and technology gives this group the possibility of serving many more people working in this area. In order to accomplish this we continually seek ideas for modifying current practices or implementation of new techniques which will allow us to serve the needs of all those associated with our fields of interest. We invite your comments and constructive criticisms on this issue. Please feel free to contact any of the group, officers or ADCOM members.

We sent a questionnaire to each member in arrears from the Group to determine why they had let their membership lapse. Of the 64 respondents, 29 stated they were no longer active in the field, 24 simply decided to cutback on their number of group memberships, and 10 stated that the publication did not serve their needs. One person decided to rejoin. These results show that most people leave the group because they are working in other areas or that they only had a marginal interest in our field to start with. We must make an effort to determine how our group publications can better meet our members' requirements since for many members the publications are the only real form of contact with the group.

As we have done in the past, we shall encourage interested persons to join the Group by offering a one year membership, free of charge, to all persons who join at our forthcoming symposium in San Diego. We shall have a display with IEEE brochures and application forms at the symposium registration desk.

Bill Tanski
GSU Membership Chairman

Ad Com Briefs

The G-SU Ad Com met on March 16, 1982 at the Holiday Inn O'Hare/Kennedy, Chicago, IL presided over by W.D. O'Brien. Twenty-three people attended, which included elected and ex-officio members, G-SU Representatives, future Symposia chairmen and Subcommittee Chairmen.

W.D. O'Brien reported on several TAB meetings he attended. Of interest to G-SU were the formation of an IEEE Council on Fiber Optics, which the G-SU decided to join, and the possible formation of a Council on Robotics.

The financial condition of the Group remains healthy. H. van de Vaart reported that income and expenses for 1981 were \$154.1K and \$135.7K, respectively, for an operating surplus of \$18.4K. The net worth as of 12/31/81 was \$106.0K.

Six issues of the Transactions on Sonics and Ultrasonics were published in 1981 with a total of 522 pages. The budget for 1982 also calls for 6 issues, with a total of 528 pages. S. Wanuga (Transactions Editor) reported that an attempt is being made to emphasize the importance of publishing in the Transactions. Review papers are being sought. Suggested authors for these review papers are solicited from all G-SU members. As always, a fast turnaround time for publishing papers is emphasized. Considerable progress has also been made in the creation of the Transactions on Medical Imaging (TMI). Michel M. Ter-Pergassian from Washington University was named Editor-in-Chief, with Jack Reid, Drexel Institute representing the ultrasonics interest. D.E. Yuhas reported that the total number of TMI subscribers as of 1/31/82 was 855.

1060 copies of the 1981 Ultrasonics Symposium Proceedings were printed. Of these, 500 copies were sold to IEEE under the Bookbroker program. B.R. McAvoy, Proceedings Editor, expressed concern about a new formula that the IEEE has formulated for paying the Groups and Societies for their Proceedings, specifically about the absence of an inflation factor in the formula. A motion was passed to pass this concern on to IEEE. B.R. McAvoy also reported that orders for the Proceedings at Conference cost can be taken up to the date the Proceedings are printed.

A final report on the 1981 Ultrasonics Symposium was presented by W.D. O'Brien, Co-Chairman. The Symposium had a small deficit, primarily due to higher than expected printing and mailing cost, and the cost for Labor and Services. The attendance figures were: IEEE Members 231, Non-Members 172, Students 77, Complimentary 16, for a total of 496.

The budget for the 1982 Symposium in San Diego was presented by B.R. Potter, Finance Chairman. It was decided to increase the difference in registration fees for

members and non-members, in order to encourage IEEE membership. Registration fees were set at \$55 and \$85 for registration in advance, and \$65 and \$95 for registration at the conference.

Planning for the 1983 Symposium in Atlanta, GA is well under way. It will be held at the Marriott Hotel, October 31 - November 2. The 1983 Symposium will be the first time an "official" industrial exhibit is planned. The exhibit will be managed by LRW Associates, a new company started by L.R. Whicker. Larry Whicker is well known in IEEE and by members of G-SU: he was the General Chairman of the 1976 Ultrasonics Symposium in Annapolis, MD and the 1980 MTT Symposium, Chairman of the TAB Meetings Committee in 1981 and he is presently candidate for Director of Division IV for 1983/84. Future Ultrasonics Symposia are planned for 1984 in Dallas, TX, Sept. 19-21 (L.T. Clairborne and W.J. Tanski); 1985 in San Francisco, CA, Sept. 24-27 (W.R. Shreve); 1986 in Williamsburg, VA (R.A. Moore and J.C. Miller). For 1987 Hawaii is under consideration!

L.R. Kessler, the 1981/82 National Lecturer, presented a status report. 31 lectures were given, and 7 more were planned. For 1982/83 the National Lecturer will be Frank E. Barber, Assistant Professor of Radiology at Harvard Medical School. The title of his talk is: "Ultrasonics in Medical Diagnosis and Biomedical Research."

E. Papadakis reported on the results of the questionnaire that was distributed at the 1981 Symposium. Two facts clearly emerged: almost all the attendees responding had heard of the Ultrasonics Symposium before 1981 (269 out of 288) and a vast majority had attended one or more previous Symposia (198 out of 288). Of the 8 who had not heard of the Symposium before 1981, only 4 cited advertising as their first source of information. It was clear that adding so few people for a cost of several thousand dollars in advertising was not cost effective, and it was decided to discontinue the advertisements. An extensive evaluation of the Survey was also conducted by S.A. Goss, and presented as a complete report. Both evaluators emphasized one disturbing fact, namely, that only 31.6% of the attendees were members of G-SU, even though 61.4% were members of IEEE.

The Fifth International Meeting on Ferroelectrics (IMF-5) was held at Pennsylvania State University, August 17-21, 1981. The meeting was attended by 325 participants from 27 countries. 34 invited papers and 357 contributed papers were presented. The proceedings of this meeting were published in five issues of the Ferroelectrics Journal. The 1983 International Symposium on Applications of Ferroelectrics (ISAF) is planned for June 1-3, 1983 at the National Bureau of Standards in Gaithersburg, MD.

W.J. Tanski (Membership Chairman) reported that on February 28, 1982 membership stood at 1910, a 3% increase from February 28, 1981. The one year free membership

offer at the 1981 Ultrasonics Symposium resulted in 22 new members.

The Nominating Committee (M. Levy, Chairman) presented a slate of six candidates for the three elected positions on the G-SU AdCom for January 1, 1983, to December 31, 1985. The candidates are: M.A. Breazeale (University of Tennessee), S.A. Goss (Indianapolis Center for Advanced Research), E.A. Papadakis (Ford Motor Company), P.J. Tournois (Thomson-CSF), R.S. Wagers (Texas Instruments), and R.C. Williamson (MIT-Lincoln Labs).

R.A. Moore (Chapter Chairman) announced the formation of a new local G-SU chapter in Irvine, CA. The G-SU has now six active chapters. These are: Boston, MA; Pittsburgh, PA; Baltimore, MD/Washington, DC/Northern Virginia; Santa Clara Valley, CA; Long Island, NY; and Irvine, CA. Letters were sent to several technical leaders outside the U.S. encouraging the formation of local chapters and offering help in forming a chapter in any way possible.

W.D. O'Brien mentioned that H. van de Vaart has rewritten the Constitution and Bylaws to bring them more up to date with the way the G-SU presently operates. A few copies were distributed for initial comments. A more detailed discussion is planned for the Fall AdCom meeting, to be held on Tuesday, October 26, 1982 at the Town and Country Hotel, San Diego, CA, starting at 1:00 p.m.

The G-SU AdCom meeting was adjourned at 5:00 p.m.

H. van de Vaart
G-SU Secretary-Treasurer



"And there is going to be a paper at the 1983 Ultrasonics Symposium in Atlanta, right?"

AN IMPORTANT NEW JOURNAL IEEE TRANSACTIONS ON MEDICAL IMAGING

SPONSORS

The journal is a joint publication of four IEEE societies: IEEE Engineering in Medicine and Biology Society, IEEE Nuclear and Plasma Sciences Society, IEEE Group on Sonics and Ultrasonics, and IEEE Acoustics, Speech and Signal Processing Society. The journal is published in cooperation with the IEEE Computer Society.

AIMS AND SCOPE

The journal will focus on a unified common ground where instrumentation, systems, transducers, computing hardware and software, mathematics and physics are handled together. Authoritative studies will be published on generation, processing and/or display of medical images.

EDITORIAL POLICY

The journal will publish original contributions on medical imaging relating to ultrasonics, X-ray imaging and tomography, nuclear isotope imaging systems, image processing by computers, microwave and nuclear magnetic resonance imaging, radiation sensors and detectors, mathematical tools and analysis of medical image formation, perception, display, and pattern recognition. Studies involving highly technical perspectives will be most welcome. All submitted papers will be peer-refereed.

PUBLISHING

The journal will begin publishing in 1982 as a quarterly journal with 400 pages per year. High quality reproduction techniques will be used. Details related to submission of manuscripts may be obtained by contacting Michael M Ter-Pogossian, Ph.D., Washington University, School of Medicine, 510 South Kingshighway, St. Louis, MO 63110.

ORDERING

A member of any IEEE society may subscribe at a cost of \$8.00 per year. Non IEEE society member costs are \$50.00 per year. To order, write to IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. Telephone (201) 981-0060.

FREE SAMPLE

When available, a sample copy of the IEEE Transactions on Medical Imaging can be obtained by writing Martin Plotkin, Brookhaven National Lab, Bldg 902A Upton, NY 11973.

TRANSACTIONS ON SONICS AND ULTRASONICS

The Publications Committee of our Transactions is presently pursuing a major effort in attempting to better serve authors who will be submitting manuscripts for publication in the Transactions. The Editor, Associate Editors and the IEEE Publication members will be making special efforts to speed up the review process, publication turnaround time and more direct correspondence to authors to keep them informed of the status of their manuscripts. We all want to keep our Transactions as the best Technical Journal to publish articles dealing with all of our technical areas of Sonics and Ultrasonics. All the above members of the Publication Committee have been notified and made aware of some rules that must be carried out in order for us to be successful in this endeavor.

This section deals with some aspects of author responsibilities that would also serve to achieve the same goals that are common to all of us. First and foremost is that all authors should read the outside back cover of the Transactions and follow those suggested guidelines for submitting manuscripts.

Of special importance are:

- a) Send one original and 3 copies of the manuscript directly to the Associate Editor under whose topic the manuscript content is involved; i.e., Filters and Resonators, Acoustic Imaging, etc.
- b) Include a signed Copyright release with the manuscript.
- c) Include photos and short biographies of all authors, again with the original submission. Photos and biographies are not necessary with correspondence letters.
- d) Make sure you include a separate list of Figure Captions in the manuscripts.
- e) Use similar mathematical symbols throughout the manuscript.
- f) Make sure you have a complete mailing address and telephone number where you can be reached.

In addition to the above, the following guidelines are also being instituted:

- 1) Correspondence letters should be marked as such and have the general length, 4 to 6 double spaced typewritten pages and up to 4 figures.
- 2) If authors are asked to revise manuscripts, deadlines for revisions will be as follows:
 - a) Minor revision - up to 45 days
 - b) Major revision - up to 90 days.

If these are not carried out, the manuscripts when resubmitted will be treated as a new original submission date.

3) There is an increase of interest for papers dealing with "Applications." We solicit papers of that type which will serve a wide audience of professionals and industry.

4) We are planning to have "Special Sections" in the Transactions. Special

Sections are defined as 3 or 4 papers of a particular topic; for example, "SAW Resonators" being published in one Transaction Issue. We again solicit authors to get in touch with each other and the Associate Editors, or Editor to inform them of their desire to participate in a "Special Section" of the Transactions.

5) Special Issues on an annual basis that is of high interest to our Group. The Editor is presently soliciting Guest Editors for those "Special Issues." If any member wishes to volunteer as a Guest Editor or has suggestions for such (topic or Guest Editor), please contact the Editor directly.

We are also attempting to increase our pages in the Transactions and are, therefore, desirous of increasing the submitted manuscripts. The entire Group of Sonics and Ultrasonics serves our membership and Scientific community in publishing and making available as a publishing resource "The Transactions on Sonics and Ultrasonics." We solicit your support and cooperation in carrying out the above guidelines and suggestions to help make the Transactions on Sonics and Ultrasonics an effective and most desirable Journal for Technical Publications.

Stephen Wanuga
Editor, Transactions
on Sonics & Ultrasonics

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AWARDS

The S.U. Awards Committee has decided to give the 1981 Best Paper Award to S.D. Bennett and E.A. Ash for their paper, "Differential Imaging with the Acoustic Microscope," which appeared in the March issue.

The paper describes a method of producing acoustic images which show only changes that have occurred in a specimen between two observations. It is shown how equipment imperfections can be compensated for, and experimental results are given which were obtained with biological samples.

The committee has also decided to give the Honorable Mention Award to D. Boucher, M. Lagier, and C. Maerfeld for their paper, "Computation of the Vibrational Modes for Piezoelectric Array Transducers using a Mixed Finite Element-Perturbation Method," which appeared in the September issue.

This paper deals with the difficult problem of computing the modes of vibration in parallelepipedic ceramic transducers which are used in high resolution sonars and in acoustic imaging devices. An economical method of computation is presented and the results are compared with experimental findings.

Robert Adler
Awards Chairman

Division IV Report

A TAB Centennial Conference is being planned by an ad hoc group headed by Barry Oakes. The event has as its objective to inform the public about high technology topics of major interest, via widely respected invited speakers. The meeting dates have been set for the third week of February 1984, and the site is Washington, DC. This conference is one that needs the support of the Societies, and Division IV has the expertise to contribute significantly to the success of the meeting. More about this later.

The President of the IEEE, Bob Larsen, signed an agreement with the European national electrical engineering societies for cooperation in organizing and planning conferences in Europe, and for allowing visiting members the privileges of guest membership. Close relations between IEEE and national engineering societies throughout the world are important to those who are interested in holding international meetings, especially if they are sited in countries where the national society has an active schedule of conferences in allied areas. Planners of IEEE conferences should be sensitive to these issues, and work with the IEEE Technical Activities Department to promote cooperation whenever possible.

On June 8, the Panel of IEEE Technical Editors met in New York City to discuss issues concerning the editing and publication of the various IEEE journals and transactions. The guest speaker was Ellis Rubinstein, who described the recent round table of government and industry leaders on the topic of restrictions to technology transfer. There will be an article in Spectrum detailing the meeting. After lunch Ellis left and got married, while the editors reviewed aspects of operations of the IEEE Publications Department. To summarize the publication times of articles in Division IV journals for 1980:

Trans/Journals	Pub. Time (wks)	% of Revd Articles
Electron Device Letters	13	86
Quantum Electronics	27.5	47
Magnetics	33	38
Components, Hybrids & Mfg. Tech.	34	100
Electron Devices	40.5	82
Sonics & Ultrasonics	44	83
Microwave Theory & Techniques	47	92
Antennas & Propagation	63	94
Median of 33 Trans & Journals	53	

At its June meeting, IEEE Executive Committee approved the recommendation of the Publications Board to raise the 1983 voluntary page charges to \$95 per page. Also approved for 1983 is the new IEEE Journal of

Lightwave Technology, which is a very significant item for Division IV Groups and Societies. Dr. Henry Kressel has been guiding the organizing committee, and one of their accomplishments is the selection of an outstanding editor, Dr. Tom Giallorenzi. This journal will rapidly become a major IEEE publication.

Two other IEEE publications are on the horizon -- the Communications Society is starting in 1983 the IEEE Journal on Selected Areas in Communications, and a committee has been formed to develop a journal in the area of robotics.

In the latest installment on where your money goes, the TAB Finance Committee has examined the costs for accounting and financial recordkeeping, and determined that the portion attributable to Groups, Societies and Councils is \$371K (about 40% of the total). The recommendation of the Finance Committee is that this amount be paid by the TAB entities in 1983. Because these charges are to be related to the actual costs incurred by the Societies, as I urged last year, instead of treated as a tax on those who can best pay, the amounts due by Division IV Groups and Societies will be proportionately less than the increase of the total compared to last year.

The primary activity of the IEEE is the transfer of technical information within the electric engineering community. With the rapid increase in technology throughout the world, the community of participants has become global; about 30% of Group and Society memberships are from countries other than the U.S., as are many of the contributions to the Transactions. In a recent personal trip to New Delhi I had the opportunity to meet with Dr. R.K. Arora, chairman of the ED/MTT Chapter there, as well as several other present and past officers, thanks to the kind help of Dr. Prasad Kodali. Interactions without our Societies, whether it be the delivery of transactions, participation in meetings, visits by Society lecturers, or other activities, are very real issues to them, and I would urge all Societies to keep the larger scope of their memberships in mind as they plan their programs. Spectrum and The Institute are now airmailed to all Section Newsletter Editors in Regions 8, 9 and 10 in order that local members can obtain calls for papers and other time-critical information without excessive delays. The Publications Board is exploring improved methods of mailing Institute publications to overseas locations, and the prospects are good of substantially decreasing some delivery times.

On this year's ballot there is a proposed constitutional amendment to restrict all IEEE activities to the U.S. This proposal would attempt to sever the connections of the world-wide technical community that have been built over the years. The vision of this proposal ends at the U.S. borders, and fails to perceive the facts that the U.S. no longer has all the answers to technological questions, and that the community of technical specialists transcends national

boundaries. Excellence is not a matter of geography, and if the IEEE is to stay in the mainstream of the future of electrotechnology it must encourage the participation of engineers through membership in a transnational organization.

If I may be permitted a little electioneering in this column, I would remind you that I am a candidate this year for Executive Vice President of the Institute. The position is one with a constituency of the entire IEEE, and over the years I have participated in the activities of most of the entities of the Institute. I believe that I can bring a sensitivity to the concerns of the Groups, Societies and Councils to the deliberations of the Executive Committee, and if elected that is what I shall do.

Allan C. Schell
Division IV Director

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EDITORS THANK YOU

The editor appreciates the articles from various members which make-up this issue of the G-SU newsletter. Newsworthy articles from any G-SU member are welcomed.

The editor also gratefully acknowledges the work of Bob Mills who patiently typed this newsletter.

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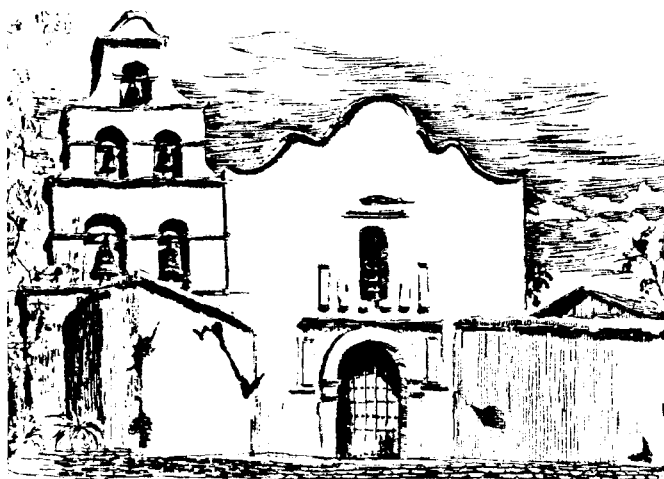
The INSTITUTE OF ELECTRICAL & ELECTRONICS ENGINEERS, Inc.
445 Hoes Lane Piscataway, N.J. 08854

CONGRATULATIONS

The following members were elected to serve as Ad Com members of the IEEE Sonics and Ultrasonics Group for a three year term beginning January 1, 1983.

Emmanuel P. Papadakis
Robert S. Wagers
Richard C. Williamson

We wish the newly elected Ad Com members success and thank all nominees for their willingness to serve and for permitting their names to be included on the ballot.



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