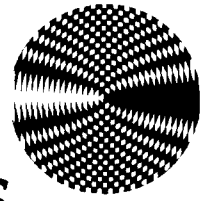




IEEE



# SONICS AND ULTRASONICS GROUP NEWSLETTER

NUMBER 44 - APRIL 1978

EDITOR: FRED S. HICKERNELL

## PRESIDENT'S REPORT

As President of the Group, I was able to participate in four TAB meetings and one USAB Conference during 1977. It was a privilege to interact with all the other Group/Society/Council Presidents and to put forward GSU's viewpoints when required. At the last TAB meeting in San Diego, I was able to sustain a long discussion on USAB's attempts to enforce universal "Registration" of engineers and thus influenced the voting on a motion to defeat universal registration. The answer to USAB by TAB at this meeting was a resounding "NO".

The 1977 Conference on U. S. Technological Policy Issues, at Washington, D.C., sponsored by USAB was very instructive, and resulted in some interaction between several congressional legislature groups and conference attendees. The objectives of the conference were: (1) to determine how IEEE could assist or influence the passage of legislation on technological issues affecting the USA, (2) to determine from congress, via selected Senators and Representatives, the approach IEEE or individual members of IEEE, should adopt to be of greatest service to Congress, (3) which editorial path should a "Position Paper" have to follow to be finally approved as the official attitude of IEEE by the Board of Directors and (4) briefing on current IEEE Energy position papers.

Seven topics in all were discussed by individual groups of attendees, who chose the subject of most interest to them. The subjects were R&D, Energy, Communications, Man and Radiation, Technology and Health Care, Privacy and Standards. The chairman of each working group produced a report and recommendation of his group. These have been combined into a proceedings and can be

obtained by anyone by requesting a copy of "Proceedings of IEEE 1977 Conference and Technological Policy Issues" from IEEE Washington, D.C. Office, 2029K Street NW, Washington, D.C. 20006, Tel. (202) 785-0017.

Appointments for each attendee with his or her Representatives and Senators were made by the IEEE Washington office. Due to pressure of work in Congress many of these appointments could not be met. However, in many cases, a Legislative Assistant was able to discuss some issues and was able to pass to the Senator or Representative the "package" of literature on IEEE Position Papers on several subjects including energy, fusion, power, and R&D.

The final conclusion reached on objective 3 was that the drafted position paper should be sent for approval to all interested G/S/C Ad. Com. Thereafter, comments and criticisms from these groups would be returned for a second draft which would be passed to TAB and USAB then finally to the Board of Directors for approval as the official IEEE position on the relevant subject. While this approach may be suitable for future predicted legislation, it is far too cumbersome and long for most legislation being discussed by Congress.

At the most recent TAB meeting in Miami Beach, Feb. 17, 1978 the subject was once again brought up for discussion, but no satisfactory agreement was reached. It would appear that, in urgent cases, the most suitable approach would be for the G/S/C most directly concerned to interact directly with Congress through the IEEE Washington, D.C. Office.

(continued next page)

Dr. W. D. O'Brien, Jr. (Sec.-Treasurer)  
Bioacoustics Research Lab  
University of Illinois  
Urbana, ILL 61801  
217/333-2407 or  
217-333-1640

Dr. E. P. Papadakis  
Ford Motor Company  
Manufacturing Development Center  
24500 Glendale Avenue  
Detroit, MI 48239  
313/533-1035 x 333

Dr. M. B. Shulz (Boston Chapter)  
Raytheon Research Div.  
28 Seyon Street  
Waltham, Mass. 02154  
617/899-8400 x 2466

Dr. W. J. Spencer  
Sandia Laboratory  
Albuquerque, NM 87115  
505/264-7221

Dr. R. B. Thompson (Membership)  
Rockwell International  
P. O. Box 1085  
1049 Camino Dos Rios  
Thousand Oaks, CA 91360  
805/498-4545 x 158

Professor C. A. Tsai (Pittsburgh Chapter)  
Carnegie - Mellon University  
Department Of Electrical Engineering  
Schenley Park  
Pittsburgh, PA 15213  
412/578-2461

Dr. H. van de Vaart (Awards)  
Sperry Research Center  
100 North Road  
Sudbury, MA 01776  
617/369-4000 x 309

Dr. S. Wanuga (Transactions)  
General Electric  
Electronics Lab  
Room 234  
Electronics Park  
Syracuse, NY 13221  
315/456-2027

Dr. R. C. Williamson  
MIT Lincoln Labs.  
Room d-331  
P. O. Box 73  
Lexington, MA 02173  
617/862-5500 x 358

\* \* \* \* \*

CHAPTER NEWS

WASHINGTON/NORTHERN  
VIRGINIA/BALTIMORE CHAPTER

BOSTON CHAPTER

The following were recently elected as officers to serve the Boston Chapter:  
Lee Solie, Sperry Research Center, Chairman;  
John Melngailis, MIT Lincoln Labs. Vice-Chairman;  
Alan Budreau, RADC/EEA, Secretary-Treasurer. There are approximately 50 members in the Boston Chapter with a good attendance of 20 to 30 at the regular monthly meetings. The schedule for the coming year has been finalized. Anyone in the Boston area wishing to join this active group or attend the technical presentations should contact Lee Solie at Sperry Research Center, Sudbury, MA, 617/269-4000

M. B. Shulz

Official status for our chapter was approved by IEEE on December 19, 1977, after a petition containing signatures of twenty-eight (28) Sonics and Ultrasonics Group members was sent to IEEE Headquarters. Our first meeting was held March 29. The speaker was Professor R. M. White of the University of California, Berkeley, who described techniques for performing physical measurements using surface acoustic waves. At our second meeting, which was held June 27, Dr. Peter Wells of the Department of Medical Physics, Bristol General Hospital, Bristol, U.K., was the speaker. He discussed current medical ultrasonics research at Bristol.

Chapter officers for the first year are:  
R. A. Moore, Westinghouse, Chairman; D. C. Webb, Naval Research Laboratory, Vice Chairman; K. L. Davis, Naval Research Laboratory, Secretary/Treasurer.

Ken L. Davis

STEPHEN WANUGA

Chapter News

Western Pennsylvania Sonics/ Ultrasonics Chapter

1977 Transactions

Our 1977 Transactions were right on target; 436 pages, 6 issues, and 52 articles. The articles had a more balanced coverage of all the technical areas of interest with SAW's (18) being the leading category.

The voluntary page charge returns for this year were: January 61%, March 71%, May 84%, July 54%, September 83%, and November 76% for an impressive overall of 72% for the year. The entire Publications Committee and AdCom Group of Sonics and Ultrasonics wishes to express deep gratitude for the high response of authors honoring the voluntary page charges. These help sustain a large part of the publication costs and keep the Transactions on a firm budgeted expense without drastic departure from the six issues and their contents.

1978 Transactions

Our budget for 1978 includes 6 issues with a total of 472 pages. This is an increase of 36 pages over our last three year's budgeted amount. There will be several book reviews published throughout the year. All the backlog of papers is presently exhausted. There is at present some need for additional papers for Transactions publications. Presently submitted and accepted papers will obviously have a fast turn-around time in publication.

Correspondence Papers

A recent innovation in the Transactions is the Correspondence Section as noted in some of the 1977 issues. The Correspondence Section will be a normal inclusion in all future issues. The addition of the correspondence paper will offer faster review and publication of short manuscripts. Authors wishing to publish short versions of their research for fast dissemination of their results are encouraged to make use of this method. As a guideline, correspondence-type manuscripts should generally consist of not more than four figures and not more than six double-spaced typewritten pages.

New Copyright Law

Copyright is vested in the author (or his employer), the moment he writes his paper, and these rights remain with the author unless he specifically transfers them to the publisher (or anyone else) in writing.

Simply stated, the impact of the new law as regards copying is to officially legalize most of the normal kinds of personal use single copying that is presently going on, but to put the clamps on large scale copying operations of the sort that occurs in large industrial libraries and the growing number of literature copying centers.

Hereafter, copyright transfers will be mailed out to authors to be returned to the editor. If there are any further questions, please call or write: E.K. Gannett, Director-Publishing Services, IEEE, 345 East 47th Street, New York, New York 10017. Telephone (212) 644-7548.

A second attempt to obtain an official status for our Chapter was made recently. A petition consisting of 12 signatures of regular members and the endorsement of the IEEE Pittsburgh Section were submitted to IEEE Headquarter in Mid-January. We are confident that an official status will be granted this time. The chapter officers for the first year are: Bruce McAvoy, Walter Leschek, and John Smith of Westinghouse; Frank Meno of University Presbyterian Hospital, and Chen Tsai of Carnegie-Mellon University. In this connection, we have provided some useful informations to Dr. R. Moore of Westinghouse in Baltimore who is in the process of establishing a chapter in the Washington, D.C. - Baltimore area. We have also provided him with several names for future speakers. We continue to hold joint meetings with the local Electron Devices Chapter. Ernie Stern of MIT Lincoln Laboratory will speak on "Analog Signal Processing With SAW And Charged-Coupled Devices," at the March 22 meeting. Pittsburgh Section of the American Society of Nondestructive Testing (ASNT) has indicated interest in holding some joint meetings with our chapter. This matter will be actively pursued in the coming year.

\* \* \* \* \*

BOSTON CHAPTER REPORT

It is with particular sadness that we note the passing of Mel Holland who was killed in an auto accident on Dec. 10, 1977. Mel was well known to the ultrasonics community---he was chairman of the 1972 Boston Symposium. But he will be especially missed by us in the Boston Chapter since he was its founder in 1970.

The membership of the Boston Chapter remains constant at nearly 100 and is quite active. Our monthly dinners and meetings typically draw 15 to 30 attendees. This year our Hartford area colleagues have been included in the mailings of our meeting announcements and their regular attendance has enhanced our meetings. Our discussion topics have, as in the past, been dominated by those concerning SAW devices and their applications. For example, we have had talks on: a novel approach to SAW reflection using metal dots, a SAW filter bank, and an optical imaging device using SAW readout. In addition, we will have a talk on SAW oscillators. There will also be talks in the area of medical applications of ultrasound and charge-coupled devices.

Officers for the 1977-78 season are: M. B. Schulz, MIT Lincoln Lab, Chairman; L. P. Solie, Sperry Research Center, Vice-Chairman; J. Melngailis, Secretary/Treasurer.

\* \* \* \* \*

IN MEMORIAM

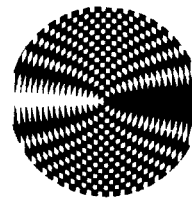
Mel Holland	1931 - 1977
Hans Jaffe	1909 - 1977
Rudy Kompfner	1909 - 1977

# 1978 ULTRASONICS SYMPOSIUM

IEEE GROUP ON SONICS AND ULTRASONICS



September 25-27, 1978



Cherry Hill Hyatt House  
Cherry Hill, New Jersey

The 1978 Ultrasonics Symposium will be held at the Cherry Hill Hyatt House, Cherry Hill, New Jersey, located just 10 minutes from down-town Philadelphia, the dates of September 25-27. Contributed papers on new discoveries, recent advances, new devices, new techniques, and applications in all areas of sonics and ultrasonics are requested. Invited papers will be presented during the regular sessions, but will be arranged to allow the symposium participants to hear as many papers as possible. Poster sessions, similar to those held at the 1977 Ultrasonics Symposium, will be held again. In these sessions a meeting room is filled with bulletin boards on which presenters place graphs, diagrams, data, pictures, or text to illustrate the main points of their presentation. Visitors to the sessions can either wander through or go directly to the papers that interest them.

The deadline for abstract submission is June 9, 1978. This deadline has been set as late as possible to insure that the Symposium will serve as a forum for the most current work. The abstracts (original and 16 copies) should be submitted to the Chairman of the Technical Program Committee, Dr. Thomas M. Reeder. Instructions for preparation can be obtained from Dr. Reeder at the following address.

Dr. Thomas M. Reeder - M.S. 31  
United Technologies Research Center  
Silver Lane  
East Hartford, Connecticut 06108  
Telephone: (203) 565-2215

Papers will be selected by the Technical Program Committee and the first author for each paper will be notified of the Committee's action. Authors should present visual material as either 35mm slides or vuegraphs. Requests for special facilities must be made with the Local Arrangements Chairman, G. Timothy Pearman, at the address indicated below.

Hotel reservations should be made as early as possible with:

Cherry Hill Hyatt House  
2349 West Marlton Pike  
Cherry Hill, New Jersey 08002  
(609) 662-3131

Mention the 1978 Ultrasonics Symposium when making reservations. The deadline is September 1. The Philadelphia International Airport, located approximately 20 minutes from the conference site, is served by most airlines. Limousine service is available to the hotel. Taxis and car rentals are also available.

A cocktail party is planned for the second night of the Symposium, Tuesday, September 26. A ladies program will be planned to include a "get acquainted" coffee, tours of the Independence Hall area, and a Luncheon.

Requests for further information, meeting space or special luncheons should be made to:

Conference Chairman  
Dr. Frederic S. Welsh  
Bell Laboratories  
Allentown, Pennsylvania 18101  
Telephone: (215) 439-7978

or

Local Arrangements Chairman  
Dr. G. Timothy Pearman  
Bell Laboratories  
Allentown, Pennsylvania 18101  
Telephone: (215) 439-6750

TECHNICAL PROGRAM

The vitality of ultrasonics is evident from the number of papers submitted for the 1977 Ultrasonics Symposium. One plenary, 29 invited, and 191 contributed papers were presented compared to 2 plenary, 14 invited and 172 contributed papers at the 1976 symposium. The number of submitted contributions was up 15 percent from last year, which made paper selection a difficult task for the program committee. The distribution of papers in technical subject areas remained similar to the past few years, with slightly more than 50 percent in Surface Waves. The one significant change was in Acoustic Imaging where the number of contributed papers increased from 7 in 1976 to 26 this year.

This year two innovations were tried. An "Outstanding Paper" award was instituted to recognize contributed papers of exceptional quality. Eighteen papers were selected by the session chairmen and recognition was made in the Symposium Proceedings. The second innovation was to record the discussion following each paper for transcription in the Proceedings. Unfortunately, this was not as successful as we had hoped because much of the information was lost due to recording problems.

In retrospect, the technical program was a real success, thanks to the high quality of the authors' contributions and the hard work of the Technical Program Committee. Ultrasonics is certainly alive and well, and we can look forward to an exciting 1978 meeting in Philadelphia.

Thomas W. Bristol

\* \* \* \* \*

ATTENDANCE STATISTICS

The following attendance statistics for the 1977 Symposium compiled by Tom Hickernell reflect the international flavor of this meeting and the wide geographic distribution of the attendees.

Japan	20	Pacific Coast	98
England	13	Southwest	65
France	12	Rocky Mountain	2
Canada	12	Plains	11
Germany	3	Midwest	53
Scotland	3	South	13
Netherlands	2	Atlantic Coast	84
Other	11	New England	50
	76		376

The affiliations of the attendees divided in the following manner:

Private Industry	192
Universities	152
Independent Research Labs	69
Government Labs	41
Hospitals	8

ATTENDEES  
AT 1977  
ULTRASONICS  
SYMPOSIUM

(WOULD YOU  
ENTRUST YOUR  
SAW WORK  
TO THIS GROUP?)



The response to our Future Symposia Questionnaire, distributed at the 1977 Phoenix Symposium, although not large was earnest. Those who did respond did so thoughtfully with many useful comments.

Comments about the 1977 Phoenix Symposium (which some included on the questionnaire) were all positive: "Local arrangements were excellent", "Don't change a thing" and "Well run" summarize the response. Fred Hickernell, Irving Kaufman (General Co-Chairmen) and staff of the 1977 Symposium will be happy to know that someone noticed and appreciated their efforts to bring about a very successful meeting.

Where would you like to see future Symposia? In response to this question San Francisco, San Diego, and Hawaii got a large response and our 1982 Symposium is slated for San Diego. The North-East also has its proponents and in 1983 we will convene in Atlantic City.

When is a good time? With a few exceptions the consensus is that the present dates are O.K. - Late fall, before Thanksgiving. Some respondents wanted springtime and others were concerned about special conflicts. In this connection, may I hasten to point out that we scan the IEEE Master calendar, Medical Meetings calendar, and various journal calendars to try our best to avoid meeting conflicts. In addition, the Symposium General Chairman once charged to hold a meeting at a specific location must bargain for calendar dates as well as prices and services at that location.

What changes would you prefer in Symposia Meetings? Some responses in this section asked for a more international scope for the Symposium, a meeting in Europe or Japan. This scope was also mentioned with concern for the composition of the Technical Program Committee. These and other comments will be discussed at the next ADCOM meeting and reported in a subsequent newsletter.

B. R. McAvoy  
Meetings Chairman

\* \* \* \* \*

1979 Meeting in New Orleans

Plans have been completed to hold the 1979 Ultrasonics Symposium at the Monteleone Hotel in New Orleans, Louisiana on Wednesday, Thursday, and Friday, Sept. 26-28, 1979. This hotel is a popular place for meetings of societies with an attendance such as ours, so we will occupy a large fraction of the entire hotel. Its location in the heart of the French Quarter will make it an outstanding base of operations for evening entertainment and will give you walking access to many world famous dining experiences. Make plans now to bring your spouse because New Orleans offers a long list of day and night sights and sounds to suit every taste.

G.A. Alers  
R. Stern  
Chairpersons

1979 New Orleans  
September 26-28, 1979  
General Chairman

G. A. Alers  
Rockwell International  
P. O. Box 1085  
1049 Camino Dos Rios  
Thousand Oaks, CA 91360  
(805) 498-4545 X183

1980 Boston  
November 5-7, 1980  
General Chairman

R. C. Williamson  
MIT Lincoln Labs  
Room D-331  
P. O. Box 73  
Lexington, MA 02173  
(617) 862-5500

1981 Chicago  
General Chairman

W. D. O'Brien, Jr.  
Bioacoustic Research Laboratory  
University of Illinois  
Urbana, Ill. 61801  
(217) 333-2407

1982 San Diego

1983 Atlantic City

1984 Dallas - Ft. Worth

\* \* \* \* \*

SPECIAL ISCAS SESSION

There will be a special all day session on Surface Acoustic and Magnetostatic Wave Devices as part of the 1978 International Symposium on Circuits and Systems to be held on May 17-19, 1978 at the Roosevelt Hotel in New York City. This comprehensive state of the art review includes SAW filters and circuits design, SAW programmable processors, SAW convolvers and correlators, SAW oscillators, SAW and MSW filter and resonator design, interdigital structures for MSW transversal filters, and magnetic field synthesis techniques for magnetic wave devices. For further information contact K. R. Laker, Bell Labs, Holmdel, NJ 07733 (212-979-9034). Registration for members will be \$60.00 before April 21, and \$70.00 at the meeting and includes a copy of the Proceedings available at the Symposium.

REPORT OF ULTRASONICS  
GROUP FELLOW COMMITTEE

Three members of the IEEE Ultrasonics Group were elected Fellows last year: John V. Bouyoucos, for his outstanding personal scientific contribution through initiation and development of the field of hydrodynamic energy conversion devices and for exemplary contributions to the scientific societies of his technology community; Erich Hafner, for his contributions and leadership in the fields of piezoelectric crystal and frequency control devices; and Lawrence R. Whicker for contributions to microwave and millimeter wave technology, including ferrite control components, broadband directional couplers, and for developing coupled mode circulators and attenuators.

Members of the group are encouraged to submit nominations for Fellows before April 15, 1978 to IEEE headquarters or to the chairman of the Ultrasonics Research Fellow Committee, Professor G. S. Kino, Ginzton Laboratory, Stanford University, Stanford, California 94305. Although there are many worthy candidates for this honor, we feel that we are receiving too few nominations. The necessary forms are available from IEEE headquarters. A nominee for Fellow should already be a Senior member of the IEEE.

\* \* \* \* \*

REPORT G-SU AWARDS COMMITTEE

The Awards Committee selected the following paper as their choice for the 1976 SU Transactions Best Paper Award.

"Plate Mode Coupling in Acoustic Surface Wave Devices" by Robert S. Wagers, published in the March issue.

This selection was made because of its: "excellently written detailed study and experimental verification of the various acoustic modes of propagation possible in substrates commonly used to fabricate surface wave devices."

The Awards Committee also decided to bestow an "Honorable Mention" award to the paper:

"Evaluation of a Random Signal Correlation System for Ultrasonic Flaw Detection" by N. M. Bilgutay, E. S. Ferguson and V. L. Newhouse, published in the September issue.

The author of the Best Paper received a cash prize and a plaque to commemorate this achievement. These were presented at the opening session of the 1977 Ultrasonics Symposium in Phoenix, Arizona on behalf of the Ultrasonics Community. We congratulate the authors.

MEETINGS

ACOUSTICAL SOCIETY MEETING  
May 16 - 19, Providence, R.I.  
Frank T. Dietz  
Dept. of Physics  
University of Rhode Island  
Kingston, Rhode Island 02881

CIRCUITS AND SYSTEMS SYMPOSIUM  
May 17 - 19, New York, N.Y.  
H. E. Meadows  
Dept. of Electrical Engineering  
Columbia University  
New York, N.Y. 10027  
(212) 280-3112 X3104

ACOUSTICAL IMAGING  
May 30 - June 2, Key Biscayne, Florida  
Dr. A. F. Metherell  
University of California, Irvine  
Medical Center  
101 City Drive  
S. Orange, CA 92668

FREQUENCY CONTROL SYMPOSIUM  
May 31 - June 2, Atlantic City, N.J.  
U. S. Army Electronics Technology  
Ft. Monmouth, N.J. 07703

ULTRASONIC MATERIALS CHARACTERIZATION  
June 7 - 9, Gaithersburg, Maryland  
Harold Berger  
Materials Building, Room A363  
National Bureau of Standards  
Washington, D.C. 20234  
(301) 921-3331

INTERNATIONAL MICROWAVE SYMPOSIUM  
June 27 - 29,  
A. L. VanKoughnett  
Communications Research Center  
P.O. Box 11490  
Ottawa, Ontario, Canada H2H852  
(613) 994-5007

DEVICE RESEARCH CONFERENCE  
June 26 - 28, Santa Barbara, CA  
Dr. Harvey C. Nathanson  
Westinghouse R&D Center  
1310 Beulah Road  
Pittsburgh, PA 15235

ELECTRONIC MATERIALS CONFERENCE  
June 28 - 30, Santa Barbara, CA  
David Richman  
RCA Laboratories  
P. O. Box 432  
Princeton, New Jersey 08540  
(609) 452-2700, X3207

#### IEEE's poll: a mandate at last

In the five years since the Institute of Electrical and Electronics Engineers started trying to set up a professional activities program, a constant complaint from critics has been that neither its goals nor the projects aimed at reaching those goals represent the desires of the members. Now, with the carefully prepared and circulated survey of members being analyzed this month, the institute has such a guide.

The points on which the members agree are clear enough. For one, members favor the public stands on national issues such as energy and R&D spending that the IEEE has taken in the past. A heavy majority is willing to be polled again to express their views as guidance on future positions.

For another, most members want the institute to get behind programs, such as registration, that will upgrade the status of engineers. Also, they want the IEEE to set up a legal fund to aid engineers involved in cases dealing with ethical conduct. And the majority favors various actions to curtail age discriminations as well as enhance the professional standing of engineers past 40.

Altogether, the U.S. Activities Board survey looks to have come back as an endorsement of professional activities, even though most of the members stated that they actually joined the IEEE for the technical publications. Now the question is, what will become of the results of the survey?

With a change in the leadership due next month, the fate of this survey is at present in limbo. The first step, therefore, is to get the results of the survey into general circulation—a step the institute has already taken. The more that people

concerned with U.S. professional activities know about the findings, the more surely will the survey be remembered in the coming year.

The next step would be to convert the research data into a plan of action. Here is where the going will get tricky, for some of the moves approved by the survey respondents would certainly jar the corporate interests represented in IEEE. For instance, publicizing the names of companies that have consistently ignored the standards recommended by IEEE in employing engineers might arouse the resistance of members who are also company executives.

It is therefore, important for the activists to remember that the IEEE is not going to move overnight to implement the wishes indicated in the survey. By the same token, it is important for the "reluctants" in the organization to realize that the survey will not be forgotten. For it is clearly the case that any IEEE office holder who claims to serve the wishes of the working members simply must view the survey as a mandate for professional activities.

\*

The above editorial by Gerald Walker is reprinted in its entirety with permission from ELECTRONICS magazine.  
Copyright 1977 McGraw-Hill, Inc.

---

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

Non Profit Org. U.S. Postage PAID IEEE Permit #52
---