



# OCEANIC ENGINEERING SOCIETY

**NEWSLETTER**



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EDITOR: HAROLD A. SABBAGH

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## SPECIAL ELECTION EDITION

### NOMINATION ANNOUNCEMENT

Readers who are members of SOE are requested and urged to submit nominations for the SOE (ADCOM) elections. During the startup period, members will be placed on the ballot for one-, two-, or three-year terms. Thereafter, replacements will be elected to three-year terms. Nominations should be received no later than 1 August by Donald M. Bolle, Chairman, SOE Nominations Committee, Office of the Dean, College of Engineering and Physical Sciences, Packard Laboratory 19, Lehigh University, Bethlehem, PA 18015. Nominees should submit a short biography stressing professional and IEEE activities.

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This is a special additional issue under Paragraph 425.2, DMM (USPS).

## The IEEE in 1984 and Beyond Statement of Candidacy

### Alan F. Culbertson



I am running for the IEEE Board of Directors because I have certain deeply-held views about our profession and what our professional organization can do to advance the aims of that profession.

First of all, we are a large organization. Our members commit substantial resources to keep the Institute operating. I believe it is run well and I believe that it is the duty of interested members to see that it continues to run well. Every board should have its share of experienced businessmen who are able to advise and support management in their handling of the operation.

The IEEE as an educational and professional society nevertheless occupies a visible, functional role in the industrial economy. IEEE members whose knowledge is broadened by their participation in IEEE activities find their value enhanced as they go about the day-to-day practice of their profession. This enhancement is plowed back into the economy in the form of ever-improving goods and services from the growing professional knowledge of the engineers designing them.

The task of the IEEE management, staff and volunteers alike is to make sure that this contribution is recognized and continues to receive the necessary support to keep it at the highest possible levels. Employers of engineers who support memberships and participation, and entrepreneurs who are carefully allocating their time and financial resources, must recognize that the return from IEEE activities is greater than the investment made. In my business experience, this has always been true, and I want to make sure that it continues to be true for everyone in industry.

The second important point is that the IEEE is a world-wide organization. Because of the preponderance of the U.S. membership, sometimes policy decisions might fail to reflect the interests of the minority of our members who live overseas. Technology is a world resource which transcends national boundaries. I think a greater effort is warranted to promote the trans-national nature of the Institute and to do our best to see that all our members receive equal services, regardless of where they live. Because of the trans-national nature of my business, I have contact with engineers in technology-based businesses around the world. I know first-hand of their interest in expanding their technical knowledge. I am also keenly aware that no single country has a monopoly on technical innovation. Any feeling that engineers in the U.S. can ignore developments in the rest of the world is certain to contribute to our decline in status as the world's technological leader.

It is an unfortunate but unavoidable fact of international diplomacy that some countries will want to exert control over exchange of technological information. It is important that IEEE closely monitor the application of such restrictions, lest they end up being applied where no compelling national interest actually exists. In our role of advocacy for international dissemination of information, we must make sure that restrictions are never applied

capriciously. We must maintain open channels to all agencies applying them.

There are also additional issues in which we as engineers need to take a public stand on the application of the technology which we have developed. The technological disciplines practiced by the members of the Division III have a public impact which is perhaps unique among all the other Divisions of the IEEE. The use of electronics for communications and entertainment invites public regulation, and in many countries, outright control. Unless engineers are articulate and on good terms with policy makers, advancements in technology can suffer. Uninformed government bodies can retard progress in many direct and subtle ways. These ways range from outright prohibition to inadvertent isolation of new technologies from access to their logical markets.

For this reason, I believe that the IEEE's move to establish rapport with public policy makers in the U.S. has been a sound one. When public issues have technical content, who but the IEEE is better equipped to supply advice and counsel? If we engineers don't make the effort, the politicians will end up relying upon whatever sources are convenient and accessible. This probably limits the range to something between the New York Times and the National Enquirer.

In the U.S. Committee on Communications and Information Policy, of which I am Chairman, we work at shedding light on the most important issues. There is a growing number of public issues with technical content, and there are more public officials than we can reach who would benefit from a better technical understanding. Along with the basic education of our own members, we need to continue to stress education of public officials and the public at large about the potential benefits of the wise use of technology.

The IEEE will be 100 years old in 1984. Our founders, visionary as they were, would find it difficult to comprehend the culture in which our Institute exists today. Certainly their concept of a professional organization was heavily tilted towards groups of engineers with common interests meeting in a few of the large cities where electrical engineering was then practiced.

Today our profession is far more diverse. In the jet age, our common interests are more likely to be with fellow engineers across a continent or across an ocean than with those down the street who pursued a different discipline. Yet we have continued to work with the regional structure as the dominant mode in our organizational concept. In the constant evolution of the IEEE, we need to recognize the continuously growing importance of the Society structure in providing needed services to our members. Naturally I support the proposed change to give Technical Directors equal representation on the Board with Regional Directors. I believe as time goes on, further changes may be in order to improve services to Society members.

Board membership can place great demands on a volunteer's time. I would not have accepted the nomination if I had not intended to give the job the attention it deserves. I believe that maintaining the IEEE's high standards of service to the profession, and its value to society as a whole, is worth the effort.

## Statement by Dr. S. H. Durrani (Candidate for Division III Director)



I have spent most of my professional career in the field of space communications. However, before that I spent quite some time struggling with the problem of air-to-undersea communications using electric and magnetic dipoles, and got to know the "oceanic environment" quite well! (It was baptism not by fire but by total immersion!)

For the last two years I have had the privilege of serving as President of the Aerospace and Electronic Systems Society. During this period I have worked closely with the Oceanic Engineering Society President, Dr. Chamberlain, and before him with the Council President, Dr. Bolle, to coordinate issues of common interest. This has proved to be very beneficial, especially in developing strategies to handle Institute-wide issues.

I have been active in IEEE for almost 20 years and have been a member of the Educational Activities Board, Chairman of the Washington Section (with about 5000 members), and Chairman of the Congressional Fellows Committee as well as the Manpower and Employment Assistance Task Forces. I have received a number of awards, including the USAB Citation of Honor (1980) and Outstanding Member of Region 2 (1982). Through this long involvement in several facets of the Institute, I have learned how the Institute operates and how members feel on specific issues. This extensive experience has prepared me to serve effectively as a Division Director.

I feel strongly that the Institute needs a balance between its educational, professional, and technical activities—and at present there is a slight imbalance which needs to be corrected. This is one reason why earlier this year I proposed and spearheaded a move for a Constitutional Amendment to make the number of technical Division Directors equal to the number of Regional Directors. Fortunately this idea has received widespread support and we hope to get 10 Divisions approved this year—either through a bylaws change or through a constitutional amendment.

If elected, I will strive to reinforce the Institute's technical excellence while maintaining strong educational and professional programs. I will also work for budgetary frugality and improved services. Most importantly, I will try to make the Institute leadership more responsive to member views.

Dr. Sajjad (Saj) Durrani has been active in space communications since 1966, having worked with RCA Space Center, COMSAT Laboratories, and other organizations, including NASA since 1974. He received undergraduate degrees in Pakistan, a master's in England, and a doctorate in the U.S. He has written more than 30 papers and has given popular courses on satellite communications, some scheduled in Region 9 (Latin America) this year. He has taught at several Universities in the U.S. and abroad, and was part of an IEEE-TAB delegation to Region 10 (Asia and Pacific) in 1982. He has won two NASA Special Achievement Awards and served on several interagency and NASA task forces. He was a U.S. Delegate to CCIR in 1974 and 1975. He is a Fellow of Washington Academy of Sciences and Associate Fellow of AIAA.



## Position Statement by Kiyo Tomiyasu

### Candidate for Divisional Delegate/Division Director, Division III, 1984-1985



During the past two decades the professional and technological environments have become increasingly complex and the IEEE, being a dynamic organization, is being structured to meet its needs with efficiency and proper perspective. The recently approved conversion of the IEEE

Council on Oceanic Engineering to the IEEE Oceanic Engineering Society is an outstanding example of this restructuring. It is my goal to be sensitive to the needs of Division III Societies, especially on matters such as technology transfer, enhancement of continuing education activities, and updating the organizational and awards structures throughout the Institute.

As former President of a Society, former Editor of a *TRANSACTIONS*, and having served on a Society Administrative Committee and Society Conference Committees for numerous years, it is clear to me that the strength of the IEEE resides in its Societies. At the Board level I have gained invaluable experience by serving on the Publications Board, Technical Activities Board, and on the Awards Board for many years.

During the past 15 years I have been involved in various aspects of passive and active microwave remote sensing of oceanic and terrestrial features from satellites. My contributions to technical journals include the IEEE Journal of Oceanic Engineering as well as the refereeing of papers submitted this Journal. Because my technical efforts have not been primarily in oceanic engineering activities, it is my plan to meet with members of the Oceanic Engineering Society and its Administrative Committee if elected Director of Division III. Through these personal contacts I wish to become aware of your concerns, to offer constructive comments based on experience gained from my numerous sustained IEEE activities, and convey and support the OE-S position to the IEEE Technical Activities Board and IEEE Board of Directors.

It gives me a great deal of pleasure to look forward to an opportunity to represent Division III and to interface with the Oceanic Engineering Society.

Kiyo Tomiyasu received the B.S.E.E. degree from California Institute of Technology (1940), the M.S. degree in communication engineering from Columbia University (1941), and the Ph.D. degree in engineering sciences and applied physics from Harvard University (1948). After serving one year as Instructor at Harvard, he joined Sperry Gyroscope Company to direct work in research and development of microwave radar components and devices. In 1955 he joined General Electric Company as Consulting Engineer. He directed the pioneering effort on measurement of harmonic power propagating in numerous modes in rectangular waveguide which culminated in special waveguide filters to reduce electromagnetic interference in radar and communication systems. After several years of involvement in laser development programs, he transferred to GE's Space Division where he made numerous contributions to satellite communication and microwave remote sensing of oceanic and terrestrial surfaces. He has

published over 60 papers in technical journals and holds 20 U.S. patents.

IEEE Activities (S'41-A'42-M'49-SM'52-F'62) COMMITTEES/BOARDS: Awards Board, 1974-79, 1981-83; Awards Planning and Policy, 1981-83, Chairman, 1983; Candidate Research, 1975-77; IRE Editorial Board, 1960-62; Society and Other Awards, 1976-81, Chairman, 1976-77; Standards, 1955-58; Technical Activities Board, 1967-68, Liaison, 1982; TAB OpCom, 1967-68; TAB Awards and Recognition, 1978-83, Chairman, 1981-82; TAB Publications, 1967-69, Chairman, 1967-68. REGIONS: Region 2, Branch Counselor Award Committee, 1982. SECTIONS: Long Island: Microwave Theory and Techniques Chapter, Chairman, 1954-55. Philadelphia: Awards Committee, 1981-83. San Francisco: Microwave Theory and Techniques Chapter, Chairman, 1955-56. SOCIETIES/COUNCILS: Geoscience and Remote Sensing Society: Awards Committee, Chairman, 1981-83. Microwave Theory and Techniques Society: President, 1960-61, AdCom, 1955-68, Honorary Life Member, 1973-present, Awards Committee, 1973-83, Chairman, 1973, Transactions Editor, 1957-58, Guest Editor, May 1978. Quantum Electronics Council, 1967-70, President, 1970. CONFERENCES: Conference on Laser Engineering and Applications, Co-Chairman, 1967. International Conference on Precision Electromagnetic Measurements, Technical Program Committee, 1962-76, Chairman, 1966. International MTT Symposium, Program Committee, 1958, 1962-82, Chairman, 1958. International Geoscience and Remote Sensing Symposium, Program Committee, 1981, Publicity Committee, 1982. REPRESENTATIVE: Joint Electron Devices Engineering Council Subcommittee on Gas Devices, 1959-63. CURRENT SOCIETY MEMBERSHIPS: Aerospace and Electronic Systems; Antennas and Propagation; Geoscience and Remote Sensing; Oceanic Engineering; Microwave Theory and Techniques.