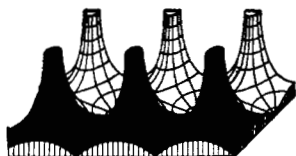


Proceedings of the IEEE

Poles and Zeros



And Now We Are One! As this is written in late November, the work of the Merger Committee is sufficiently ad-

vanced, and the remaining approvals appear certain, so that before you read this page the final steps for merger of the AIEE and the IRE will have been completed—and the formal establishment of The Institute of Electrical and Electronics Engineers accomplished. With the world as its area of work, electrical and related science and engineering as its field of interest, and the broad dissemination of technical knowledge as its goal, our new organization can have profound effect among all those concerned with the development and application of scientific knowledge for the ultimate benefit of man.

Reversing the long-time trend to disunity and fragmentation in the engineering fields, this union can aid greatly in pointing out to the nontechnical world that the application of scientific knowledge to man's use is not to be narrowly bounded—that today's engineer is a person of broad technical interests, and of abilities in management commensurate with his skills in the technical arena.

Within the field of engineering, it is to be hoped that the conjunction of this merger with the advances being made by the industry related to the electrical and electronics fields, will draw attention to the value of research as a normal engineering activity, to the necessity for knowledge of the mathematical and physical sciences underlying our work—and ultimately to the realization that neither our basic scientific fact nor our engineering method can longer be confined by our man-created professional bounds. These man-created divisions of our field were often established in frames of reference different from those of today; in former days emphasis was given to the design of hardware and its application, today we attach importance to the output of our minds and its use in solution of the new problems. We deal more with theory than with practice, we are concerned with the system more than with the component.

These changes in frame of reference seem to be creating questions which our merger has perhaps answered, and which other areas of professional activity should ask of themselves:—Do the bounds of professional activity now coincide with the present fields of work of the members? Does the society concept of the duties and responsibilities of an engineer agree with current thought, today's practice, or tomorrow's needs? Have we recognized that our professional fields are organized around apparatus application, whereas the services needed by the members of the profession may today be concentrated around cores of scientific and mathematical knowledge? Have we recognized that the interests and abilities of those entering the profession today differ greatly from the interests and abilities of the college graduates of earlier years?

We look ahead to the day when all of our professional societies shall have asked and answered such basic questions

and more, shall have benefited from a keen analysis of philosophy of service, and profited from the sort of wise leadership which has carried forward the field of electrical science and engineering in these past years. If this day comes, we will have been truly justified in now proclaiming: The Institutes Are Dead; Long Live The Institute!

Quantum Electronics. Electronics has always been quantized, in the amount of charge carried by the individual electron, so a strict interpretation of this title is not news. What is news, however, is that here again we offer a Special Issue of the PROCEEDINGS, dedicated to the quantum in the sense of generation, modulation, and detection of coherent optical radiation.

Carrying out one of its basic assignments—to survey the field and keep our members informed of new developments—the Editorial Board several years ago noted the increasing amount of research on laser techniques, and the tremendous economic advantage inherent in the frequency bands being opened, and listed the topic for special issue purposes. The issue which here results contains twenty-six papers, both solicited and contributed, and among the authors you will find eminent names in the field well represented.

Following past practice, the Editorial Board asked Professor J. R. Singer, of the Department of Electrical Engineering of the University of California at Berkeley, to act as issue organizer. He has successfully carried out this assignment, planning the issue, soliciting the contributions, arranging for review and editing the papers. Our thanks go to Professor Singer, as another of our "Editors for a Month."

The Winter General. Carrying out the merger promises that activities of the two progenitors scheduled for 1963 would be continued, the IEEE offers as its first major activity the Winter General Meeting in New York, January 27 to February 1, 1963. Expanded over previous years, and occupying the Statler-Hilton, the New Yorker, the auditorium at the United Engineering Center, the meeting offers approximately sixty technical sessions, opportunities to discuss the merger, and the Electrical Engineering Exposition at the New York Coliseum.

There will be sessions running the gamut from polyethylene to power generation, from switchgear to stochastic processes, with a dash of papers on artificial intelligence if you go for a little pepper for seasoning. For further details see page 32A.

The Mail Man. Because of the IEEE plans to utilize space for headquarters operations in both the American Gothic United Engineering Center on East 47th Street, and the French chateau on 79th Street, the mail man may be confused. To unconfuse him there is a compromise available—please use it: IEEE, Box A, Lenox Hill Station, New York 21, N.Y.—J. D. Ryder