Personal

July 24, 1946

MR. FREDERICK B. LLEWELLYN, President
Institute of Radio Engineers
330 West 42 Street
New York 18, N. Y.

Dear Mr. Llewellyn:

Problems and suggestions should be of interest if one is not deluged by them, which, I am afraid, is the case with you and the I.R.E. Board in the present revo-evo-lution of things high frequency and electronic!

At any rate, here are a few ideas concerning the activities of our institute which come to my mind from just having read the report of the Board of Directors of the A.I.E.E. published in the July 1946 issue of Electrical Engineering:

1. The I.R.E. needs a better connection with the field of science, those portions of our underlying physical knowledge which hinge upon and make our radio and electronic technique. The new technique of tomorrow, of course, comes from the curiosity as to the physics and inventive playing thereon of today. If the institute is to keep fresh in respect to ushering in the new things, as distinct from becoming old in the following of the operational phase of matters, we need a better connection than we have to the main springs of physical knowledge in things electrical. Could some liaison be established with the Physics People, and for that matter with the less-well-defined inventors?

2. In respect to getting student members as prospects for later full scale members, the A.I.E.E. seems to be more "in on the ground floor" in the colleges than is I.R.E. Their student members as of April 30, 1946 totals 5,000 odd. Competing with each other for student membership is distasteful. The two institutes are too close together in their subject matter, and the students should not

be subjected to the confusion of trying to pick between them; and the duplication of effort in this respect by members of the Faculty of the colleges is something that should be avoided. Therefore, some form of cooperative approach to the students should be worked out. Would it be possible to have a joint form of membership for the students?

3. Of the A.I.E.E. membership only about 10% are in the field of communication, according to the report above referred to. Twenty-five per cent plus is in light and power; and another 25% in electrical manufacturing. In electrical manufacturing, one might guess that perhaps 5 of this 25% are engaged in manufacturing electric communications apparatus, which would make the communications field or what might be called the weak power technique, as constituting about 15% of the A.I.E.E. membership. Now, actually this proportion of their membership is really more closely associated in technique and interest with radio and its associated form of electronics than it is with power manufacturing and service. It would seem that a more logical division between the two societies would result if this 15% or so were transferred to I.R.E. regarded as the communication society. Then a new over-all electrical setup could be had on the basis of embracing these two main subdivisions of power in one hand and the weaker current technique on the other.

From a little table of occupational analysis of membership given in the aforesaid A.I.E.E. report on Page 335 (July 1946 issue of Electrical Engineering), it is interesting to observe how that society is one of industry, rather than electrical engineering in its more scientific, inventive or academic aspect. Radio is a newer field and the I.R.E. is as yet closer to the physics of things. But, we are fast approaching the age of great operational and manufacturing responsibility which ~~this~~ is bound to put a similar predominant industrial tinge on I.R.E.

As this condition arises, it will be time to reorganize the field of the electrical societies, and this time is rapidly approaching. It would be well if we could take and act on this problem in advance, but this seems not to be the way of things of large body and great inertia! 17 YRS LATER

In any new setup, to my mind, great will be the importance of providing in it for a healthy active connection with the field of physical science whence comes the new discoveries and ideas. As a near-ultimate of the electrical field we might imagine something of a triangular nature, one corner being the linkage between science and the field of electrical application, another corner the field of power and the third corner that of weak current technique. Even this is of course, an oversimplification for it makes no adequate allowance for such allied fields of electrical application as those arising from nuclear physics, which we cannot yet adequately foresee and those linking with the important realm of the human body, biology and even physiology. Nor does this picture make any allowance for the sociological-economic aspect of the engineer himself in respect to a possible union-like movement. This would presumably have to be carried out outside of the industry itself and the domination thereover by the big companies. God knows where we're going in this respect!

Well, I toss off these ideas as they come to mind. By adding them to similar ideas that doubtless have been entertained by others, I hope you and the board can find them of some use.

Sincerely,

LLOYD ESPENSCHIED