Value of Institute Membership

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The question of membership in professional societies is one which arises early in the career of all engineers. The desirability of belonging to such organizations must naturally be the result of individual benefit received from it. Experience has shown that those things which are desired by many individuals can best be obtained through some form of organization, and a professional society, such as the American Institute of Electrical Engineers, should supply the common desires of a professional nature on the part of electrical engineers.

The signs of the times point to the increased specialization of individuals and of professional societies. It seems as if an organization of some kind was made or is in the process of making for the accomplishment of nearly everything of common desire.

The value of membership in the Institute is necessarily dependent upon the use made of it by the individual members. The *TRANSACTIONS* and *PROCEEDINGS* contain the most valuable contributions to electrical work, and are invaluable to one who expects to keep well informed regarding his profession. Nowhere else can be found papers by the same class of men of the same high rank and containing the valuable, up-to-date information and discussion as is contained in these publications. The opportunity to contribute to them, either at the general or section meetings, is one desired by an engineer who wishes to do his part and to bring forward his own ideas.

Amongst the most valuable assets of the professional man is his acquaintance with other members of the profession, and the opportunities given at the different meetings of the organization are unequalled by other ways. The training and experience which accompany the preparation and presentation of professional papers is very desirable, and the ability to influence in this way

the standards of engineering practice is quite necessary to one having responsibility or ideas of originality to bring forward.

The annual conventions offer to the members a most pleasant form of outing in connection with their professional work, and one which is of much profit as well as pleasure. By attending the different conventions which are held, a great many different places are seen, a wide and most pleasant acquaintance is formed, both in the organization and amongst the local representatives, and the opportunities for social diversion in connection with professional work are obtained under the most pleasant and advantageous conditions.

The formation and active growth of the sections and branches offers an opportunity to electrical engineers which very much enhances the value of the society to them by bringing it home and by allowing an active participation by members situated at different points all over the country. The outcome of the society as a whole will finally consist of a federation of its branches for strengthening the organization and allow it to offer in return to its members a great deal more than would otherwise be the case. The educational work which is being started and which will undoubtedly have a great value, will be a potent influence in the development of educational courses in technical institutions and also it is hoped in the systematizing and shaping of the work of men after graduation.

To some considerable extent the professional societies, as well as the Institute, replace the function of a fraternal organization. Many of the benefits are common to both forms of society. Full membership in the Institute should mean the assurance of a certain professional standing, and the fact that an electrical engineer does not belong to either grade of the organization is now something so unusual that it demands an explanation on the part of the individual, especially in case of application for a new position.

It is a fact that at present all classes of labor are organizing, the better to obtain ends desired in common by the members. With the probable future growth of the Institute, the profession of electrical engineering will be greatly strengthened and its growth accelerated by the reaction of this organization.

The possibility of influencing the standardization of engineering practice is one of the most attractive features to an active professional man, and the value of this to the profession at large is very great.

Just what one gets out of an engineering society depends to a large extent upon what he puts into it, and this, of course, must vary with different individuals. At present a man's professional work must consume his almost uninterrupted attention, and by and through the Institute it is possible to so round out his life that with the best efficiency he may obtain those factors necessary to a broad development in the most economical manner.

Electrical World.

Moving Dirt by Electricity*

In general. Comparatively new field for electric application on large scale. Most contracting plants antiquated uneconomical steam installations. Standard market material for contracting work laid out by manufacturers for steam work. Little attempt to develop electrically driven apparatus. Such apparatus at present largely old-fashioned steam equipments with motor and gears substituted for piston and crank shaft, and not suitable to obtain maximum advantages of electric drive.

Considerations. Possible saving by electric installation—central power station—economic distribution—high efficiency motors.

Rate of work—tons to be moved—distance to be moved—time limit of entire job. This gives measure of rate of moving. Corresponds to constant

times horse-power to be installed. Method of obtaining this constant.

Rate of pay. First cost and maintenance, compared with length of time installation will be in operation. Shorter the work the less important maintenance and the more important first cost.

Types of work.

A. Contracting operations:

1. Excavating.

2. Tunneling.

B. Mining operations:

1. Very wet, hydraulic.

2. Semi wet, dredging.

3. Dry, Tunneling.

4. Dry, Open cut work.

Selection of equipment.

C. The central plant.

D. The dirt loosening machines.

E. The method of transportation.

F. Selection of motors.

C. *The central plant.* Depends on considerations given under "Rate of Pay".

1. Water power development usually eliminated by heavy first cost.

2. Steam engines and electric generators—many advantages—rugged—unskilled labor—good operation over wide range of steam pressures and condenser conditions—500 h.p.

3. Steam turbines and electric generators—light, quickly installed, very economical—heavy overload cap—not very rugged and hard to find labor. 1,000 h.p.

4. Gas producer plants—special conditions—economies. Lack of overload capacity.

D. Dirt loosening machines.

For B-1. Pumps driven by constant speed motors—pressure pumps—centrifugal pumps.

For B-2. Bucket dredges—clam shell dredges. Characteristics necessary in digging motors—average load vs. peak load—stalling.

For A-2 and B-3. Tunneling machines—air drills and electrically driven compressors—pneumo-

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