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An Insight into the Workings of the Institute

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An Insight into the Workings of the Institute

by J. ALLEN JOHNSON, *Vice-President A.I.E.E., 1932-1934*



THE keynote behind the success of the Institute is the spirit of mutual helpfulness to other members and of disinterested service to humanity. That such a spirit motivates the large number of individuals who cooperate actively in the affairs of the Institute is brought out in the following discussion by J. Allen Johnson. To the many members of the Institute who are not intimately familiar with its "workings" this article should be interesting and helpful.

THE "workings" of the Institute involve many types of activity, and to many members who are not familiar with all of these activities, the administration of the Institute by its officers, committee members, staff, and others, appears as something complicated and difficult to understand. Of course, nothing could be further from the truth, and it is hoped that this discussion may serve to dispel any such impression.

Now it appears that the Institute works the way it does because of what it is and consequently that consideration should first be given to what the Institute is before proceeding to a discussion of how it works.

What the Institute is, is defined by its objects and its membership. According to its constitution its objects are "The Advancement of the theory and practice of Electrical Engineering and of the allied Arts and Sciences and the maintenance of a high professional standing among its members." Its membership comprises electrical engineers by profession, professors and other teachers of electrical engineering and electrical subjects, persons who have done notable original work in electrical science, and others engaged in electrical or closely allied work. The membership is classified into Honorary Members, Fellows, Members, and Associates. The requirements for admission to the several membership grades are specified in the constitution, and it may be assumed that all members are familiar with them.

OBJECTS

Now as to the objects of the Institute, there are a number of points to which attention should be directed. The first point is that the objects, as stated, proceed from broad unselfish motives rather than from narrow selfish ones. They are directed toward general social progress rather than mere class advancement. To the extent that these objects are directed toward advancement of the Institute's membership they are directed toward their professional rather than their economic advancement. They are based upon the principle that engineering is a profession and thus proclaim their origin in the principle of "noblesse oblige" which acknowledges the obligation of the professional man unselfishly to devote to the good of the social order some part of the advantages which that social order has enabled him to obtain. This principle, it seems to me, must be firmly maintained as the guiding principle of a professional life.

This does not mean that the Institute may not concern itself at all with the economic status of its members. It may and it does, but it does seem clear that such concern must be secondary to the primary concern of "maintaining their high professional standing." The primary concern of a professional engineering society must be to make better engineers. Better en-

gineers will result in better engineering; better engineering should result in a better world and a better world must necessarily result in a better and happier life for all, including of course the engineers themselves. Thus the Institute's stated objects seem to require that whatever the Institute may do to promote the economic advancement of its membership it must do in the spirit that such action will be for the benefit, rather than at the expense, of other social groups and society as a whole.

MEMBERSHIP

Now as to the membership, the first point to which attention should be called is that the Institute is a society of individual engineers. Engineering work is peculiarly individual work because it is very largely the product of imagination, which is inherently an individual characteristic. The Institute is composed therefore of peculiarly individual individuals.

As a second point regarding the Institute's membership, suppose we take a look at engineers and see what kind of people they are. In general, it appears, engineers become engineers because they are interested in the forces of nature and enjoy the ability which the study of engineering gives them to direct those forces "for the use and convenience of man." That is, to the extent that they share the normal human desire for power and influence, they satisfy that desire by exercising that power and influence over the physical forces of nature rather than over their fellow men. Furthermore, I believe that the desire for wealth is not a typical characteristic of the engineer. He expects his work to be properly evaluated and compensated in proportion to its worth, but he is, in general, a sane and modest chap and has no delusions of grandeur or exaggerated idea of his importance in the social scheme. Possibly he is unduly modest and underrates his value but if so he gets his compensation in the pleasure he derives from his work, and he is fortunate in having a kind of work to do in which he can take pleasure. That fact is one good reason why he owes something to the social order which has made it possible for him to acquire the knowledge which enables him to do interesting and pleasurable work. In that respect, at least, he has the advantage over the great majority of human beings. It is possible that when engineers, as they occasionally do, become unduly concerned in regard to their economic status as compared to other working groups, they forget this great advantage that they possess over most of those with whom they compare themselves. If so, they should remind themselves of it.

It is true, of course, that in times of economic stress, many engineers, in common with many workers in less attractive fields, are forced out of employment. Under such circumstances it is the duty of other engineers more fortunately situated to rally to their assistance. The engineer whom you help in time of trouble may be the very one who, in better days, provided you with an idea or an inspiration by way of the free exchange which takes place through the Institute, which enabled you to gain or hold the job which you have. Through your mere continued membership in the Institute, whether you know it or not, you have been of help to many unemployed engineers hard pressed during the recent depression, by enabling the Institute to be more lenient in the matter of delinquent dues.

Well, what has all this to do, you say, with the workings of the Institute? It has this to do. There are certain things the Institute can consistently do because it is what it is and because its members are what they are. There are certain other

things the Institute cannot consistently do because it is not what it is not. It is not a labor union. It is not an organization of class conscious workers for the purpose of promoting their own economic self-interest. It cannot call a strike of its members in order to force an increase in their compensation. Probably no Institute member ever thought of such a thing, but nevertheless the Institute has been criticized on the ground that it hasn't done enough for the economic advantage of its members. The answer of course is that that is not what the Institute is for.

The prime function of the Institute, so far as its members are concerned, is and always must be that of promoting their technical, professional, intellectual, cultural, and social advancement. It cannot consistently concern itself primarily with their economic condition as a class.

There is still another reason why a specialized engineering society like the A.I.E.E. cannot make the economic status of its members its primary concern. Engineering is *one* profession, not *many*. Its members may, and indeed must, specialize, to which fact the number of engineering societies amply testifies, but specialists though they be, they are engineers first and specialists afterward. When, therefore, such a specialized engineering group as the A.I.E.E. finds that it *must* act in the interest of the economic status of its members, the solidarity of the engineering profession requires that it do so through some joint agency with other engineering societies. As a matter of fact, the Institute does engage in certain activities of this character, which will be mentioned later on.

It was stated at the beginning that the Institute works the way it does because of what it is and an attempt has been made in the foregoing to give an interpretation of what the Institute is and why. We may now proceed to a discussion of "its workings."

Institute Management

In the first place, since the Institute is an organization of individuals, it must of course be and it is, a democratic institution. Every corporate member of the Institute, of whatever grade, has an equal right to vote. Its method of nominating and electing its officers is also thoroughly representative and democratic. Let us see how this is so.

The management of the Institute, as you know, is vested in a board of directors. This board consists of a president, 2 junior past-presidents, 10 vice-presidents, 12 directors, and a treasurer. The national secretary also serves as secretary to the board but is not a member of it. The 10 vice-presidents represent, respectively, the 10 geographic Districts and the nomination and election procedure is such that each District vice-president is nominated by his own district. The president serves for 1 year, vice-presidents serve for 2 years. The 12 directors are chosen at large, 3 being nominated and elected each year and they serve for 4 years.

NOMINATION OF OFFICERS

The nominating procedure is thoroughly democratic. Each Section chooses its own officers. Section chairmen and secretaries constitute the District executive committees. The national nominating committee consists of one representative from each geographic District, elected by its executive committee, and other members, not exceeding in number the number of geographic

Districts, chosen by and from the board of directors. As a matter of fact, the board of directors has voluntarily limited its representation on the nominating committee to $\frac{1}{2}$ the number of geographic Districts so that as a matter of practice the nominating committee is dominated by the representatives of the geographic Districts and not at all by the board of directors. It is thus quite impossible for the board of directors to perpetuate itself or to "hand pick" the nominees even if it wanted to do so. The national nominating committee has nothing whatever to say about the nominations for vice-presidents (of which 5 are elected each year) unless some District fails to nominate a candidate within the time provided by the by-laws, in which event the national nominating committee is empowered to act. The national nominating committee itself nominates only a candidate for president, 3 candidates for directors, and 1 candidate for national treasurer. The constitution provides that independent nominations may be made by the petition of 25 or more members sent to the national secretary, and that such petitions for the nomination of a vice-president shall be signed only by members within the District concerned. Thus, if any group of 25 or more members is dissatisfied with the candidates nominated by the District executive committee, or by the national nominating committee, they are entirely free to nominate independent candidates. The fact, however, that this is so seldom done is in itself an acknowledgment of the fairness and truly representative character of the nominating and election procedure as it now exists.

Summarizing, the national nominating committee of 15 includes only 5 members selected by the board of directors and this committee nominates only $\frac{1}{2}$ of the officers to be elected each year. Under these circumstances it seems quite clear that no small group can possibly control the nominations. The men who from year to year are chosen to the board of directors by this procedure, are of high caliber, and serve with unselfish devotion. They take their jobs seriously and render to the Institute a quality of service which does not in any degree suffer from the fact that it is rendered without pay.

Joint Activities of the Institute

The activities in which the Institute engages are many and various. These activities may be considered to be divided roughly into 2 classifications; first, internal activities primarily for the benefit of its own membership; second, joint and cooperative activities primarily for the benefit of the engineering profession, the country, and the world at large. The second group will be first briefly outlined and discussed. This group includes the following:

1. United Engineering Trustees, Inc., including Engineering Foundation and Engineering Societies Library
2. American Standards Association, including the Electrical Standards Committee, and the United States National Committee of the International Electrotechnical Commission
3. Engineering Societies Employment Service
4. The American Engineering Council
5. The Engineers' Council for Professional Development

UNITED ENGINEERING TRUSTEES, Inc.

The United Engineering Society, now known as United Engineering Trustees, Inc., was created in 1904 by the American Institute of Mining and Metallurgical Engineers, The American Society of Mechanical Engineers, and the American Institute of Electrical Engineers, to hold and administer for them jointly real estate and funds, "to advance the engineering arts

and sciences in all their branches, and to maintain a free public engineering library." The American Society of Civil Engineers became a member of the group in 1916. Each society has 3 representatives on the board of trustees.

The United Engineering Trustees, Inc., holds the United Engineering Societies Building at 29-33 West 39th Street, New York City, and each founder society is assessed by the U.E.T., Inc., for building operation and maintenance in proportion to the amount of space occupied and pays additional amounts for actual use of the auditorium, other meeting rooms, public address system, etc. The present Institute budget contains an allowance of \$3,000 for the building assessment. For the year which ended September 30, 1931, the actual payments amounted to \$5,713.66.

The United Engineering Trustees, Inc., also holds the principal of the gifts of Doctor Swasey and others to the Engineering Foundation for safe-keeping and administration, but the net incomes are administered by the Engineering Foundation board.

ENGINEERING FOUNDATION

The Engineering Foundation is a joint agency of the founder societies "for the furtherance of research in engineering or for the advancement in any other manner of the profession of engineering and the good of mankind." It devotes its research to human as well as technical aspects of engineering problems of wide interest. The Foundation's aid to the advancement of the profession extends to activities aimed at both understanding and application of natural laws fundamental to both physics and ethics. Co-operation and effectiveness are keynotes of the Foundation's policies. They are personal traits of its founder, Dr. Ambrose Swasey, of Cleveland, Ohio.

The Institute makes no financial contributions to the Foundation's work; on the contrary, the Foundation furnishes assistance in connection with researches recommended by the Institute and other societies. During the past several years, it has supplied substantial financial assistance for 2 researches sponsored by our committee on electric welding, one at Massachusetts Institute of Technology and the other at Lehigh University. The former has been completed, and the latter is being continued.

The Engineering Foundation board, which administers the net incomes of funds set aside for its use, is composed of 16 members, including 2 representatives of each of the founder societies, 4 representatives of the United Engineering Trustees, Inc., 3 members at large, and the president of U.E.T., Inc., *ex-officio*.

ENGINEERING SOCIETIES LIBRARY

The Engineering Societies Library, to the extent that it is not self-supporting, is supported by contributions from the 4 founder societies on the basis of an equal contribution from each plus an additional contribution from each society based upon its membership. The library board consists of 21 members: 4 appointed representatives of each society, the secretary of each society, and the director of the library.

AMERICAN STANDARDS ASSOCIATION

The American Standards Association, formerly known as the American Engineering Standards Committee, was organized in 1918 by the A.I.E.E. and 4 other societies. The American

Standards Association is now composed of about 200 member bodies. The Institute has representatives on many of the Association's committees and is sponsor or joint sponsor under the A.S.A. for a large number of standardization projects.

Under the A.S.A. procedure, all proposed electrical standards are referred to the Association's Electrical Standards Committee on which the Institute is directly represented by 3 members with an alternate. There are many other individual members of the Institute on the Electrical Standards Committee as representatives of various other groups, such as the electric light and power group and the National Electrical Manufacturers' Association.

The Electrical Standards Committee on which the Institute is thus largely represented also serves, with the addition of representatives from the American Society of Mechanical Engineers and a number of members at large (most of whom are also members of the Institute), as the U.S. National Committee of the International Electrotechnical Commission, which is the agency through which international standardization projects in the electrical field are co-ordinated with American standards and practices.

ENGINEERING SOCIETIES EMPLOYMENT SERVICE

The Institute co-operates with the national societies of civil, mining, and mechanical engineers in the operation of the Engineering Societies Employment Service with its main office in the Engineering Societies Building, New York. Offices are operated in Chicago and San Francisco also. In addition to the societies named, others co-operate in certain of the offices as follows: New York, Society of Naval Architects and Marine Engineers; Chicago, Western Society of Engineers; San Francisco, California Section of the American Chemical Society, and the Engineers' Club of San Francisco.

The New York office has been co-operating closely with the Professional Engineers Committee on Unemployment which was organized in the fall of 1931 by the local Sections of the A.S.C.E., A.I.M.E., A.S.M.E., and A.I.E.E.

The service is supported by the joint contributions of the societies and their individual members who are benefited. As in the past, it consists principally in acting as a medium for bringing together the employer and the employee. In addition to the publication of the employment service announcement monthly in *ELECTRICAL ENGINEERING*, weekly subscription bulletins are issued for those seeking positions.

In 1929, the service was on a practically self-supporting basis, but as the number of positions available declined, and as a smaller percentage of the members placed were able to make the expected contributions toward the operating costs, it became necessary for the societies to increase their appropriations, as well as to reduce the costs of operation of the service.

The appropriations of the societies have for years been adjusted according to the numbers of placements among their respective members.

For the year ending September 30, 1931, the Institute expended for this service \$1,226.22, and for the present budget year it has appropriated \$4,000. The service is supervised by a committee composed of the secretaries of the 4 societies.

Prior to the establishment of the joint employment service, the staff of each society furnished assistance to its members who were seeking positions. Many members expect their so-

ciety to make special efforts to secure positions for them, and the joint service has been more economical and satisfactory than the previous arrangement. It is certain that if the joint service were not available members of the Institute headquarters staff would find it necessary to spend far more time on employment matters.

(For an analysis of recent accomplishments of the Engineering Societies Employment Service, see Table XI of the report of the Institute's board of directors for the fiscal year ending April 30, 1934, p. 1095-1107, July 1934 issue.)

AMERICAN ENGINEERING COUNCIL

The "object" of the American Engineering Council, as stated in its constitution, is "to further the public welfare wherever technical and engineering knowledge and experience are involved, and to consider and act upon matters of common concern to the engineering and allied technical professions."

The Council includes in its membership about 20 national, state, and local engineering societies and maintains its headquarters at Washington, D. C. Under the plan of reorganization recently adopted for the purpose of making further drastic reductions in the operating expenses of the Council, the assembly and the administrative board were combined, and the number of representatives reduced. The A.S.C.E., A.S.M.E., and the Institute now have 5 representatives each, 2 other societies have one each, and there are 6 regional representatives for state and local societies. In addition, past-presidents of Council serve for 6 years after the expiration of their terms as president without being accredited to any member organization.

It is interesting to note that 2 former members of the Institute board of directors were elected officers of the Council for 1934: C. O. Bickelhaupt, vice-president, and C. E. Stephens, treasurer. Our Past-President William McClellan is chairman of the finance committee, and hence is a member of the executive committee which is composed of the elected officers and the chairman of the finance committee.

Some of the subjects considered by the assembly-administrative board in January are:

- Transfer of coast and geodetic survey to Navy Department
- Employment conditions for engineers imposed by the Federal Gov't
- Federal public works policy, governmental competition
- Securities Act of 1933
- Telephone directory classification of engineers

The wide variety of types of activities in which the Council engages is illustrated by the titles of the special committees which have been continued for 1934, as follows:

- Administration of public works
- Air transport service in foreign commerce
- Communications
- Competition of governmental agencies with engineers in private practice
- Engineers' water power policy
- Flood control
- Naval towing tank
- Patents
- Relation of consumption, production, and distribution
- State engineering councils
- Telephone directory classification of engineers
- Water resources
- Committee to appear before coordination committee of founder societies

In his annual report, presented in January, L. W. Wallace, who resigned at that time as executive secretary, stated that in no like period in the Council's history had its assistance been sought as much as during 1933, and specifically after March 4.

A large number of the Federal agencies called upon it for advice and for recommendations of engineers for many types of work. The Council has endeavored in so far as possible to protect the well-being of the engineering profession by encouraging any desirable developments and opposing those which were considered to be against the public welfare.

F. M. Feiker, who succeeded Mr. Wallace as executive secretary, in January, is anxious to have the Council become known as the "Washington Embassy" for engineers and engineering, and is intensively seeking ways in which it can most effectively serve the engineering profession and through it the public welfare.

ENGINEERS' COUNCIL FOR PROFESSIONAL DEVELOPMENT

This activity is undoubtedly the most important and far reaching movement for the advancement of the professional standing of engineers which has ever taken place. The following discussion of it is taken largely from the Council's first annual report, published Dec. 4, 1933.

The Engineers' Council for Professional Development, a new agency of the engineering profession, was brought into being in October 1932, by joint authorization of the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, the American Institute of Electrical Engineers, the American Institute of Chemical Engineers, the Society for the Promotion of Engineering Education, and the National Council of State Boards of Engineering Examiners.

The Council consists of 21 members, 3 from each of the participating bodies, from whom a chairman is elected, and a secretary, who need not be one of the representatives. Its purpose is the enhancement of the professional status of the engineer. To this end, it aims to co-ordinate and promote efforts and aspirations directed toward the higher professional standards of education and practice, greater solidarity of the profession, and greater effectiveness in dealing with technical, social, and economic problems. Its immediate objective is the development of a system whereby the progress of the young engineer toward professional standing can be recognized by the public, by the profession, and by the man himself through the development of technical and other qualifications which will enable him to meet minimum professional standards.

E.C.P.D. functions by studying questions within the range of its objectives, and making recommendations from time to time to the governing boards of the participating societies as to procedures that are considered of value in promoting such objectives. It will administer only such procedures as have been approved by the boards of the participating societies and assigned to it.

During its first year, the Engineers' Council for Professional Development perfected its organization and made far-reaching recommendations including (1) a program for accrediting engineering schools, (2) a minimum definition of the engineer, and (3) a suggested scheme looking to greater uniformity in the grades of membership in the professional societies. The Council has 4 standing committees.

The function of the committee on student selection and guidance is to report to E.C.P.D. schemes for the educational and vocational orientation of young men with respect to the characteristics of an engineering education and the responsibilities and opportunities of engineers in order that only those

who have the high qualities, aptitude, and capacity required to obtain intellectual satisfaction therefrom may seek entrance to such courses.

The duties of the committee on engineering schools are to report to E.C.P.D. means for bringing about co-operation between the engineering profession and the engineering schools. As a first step in its activity, the committee has the duty of reporting to the Council criteria for colleges of engineering which will insure to their graduates a sound educational foundation for the practice of engineering. The Council voted to approve the recommendations of this committee and to recommend to the participating bodies that E.C.P.D. be set up as an accrediting agency for schools of engineering.

The duties of the committee on professional training are to report to E.C.P.D. plans for the further personal and professional development of young engineering graduates and young men entering the profession without formal scholastic training.

The committee on professional recognition is charged with the duty of reporting to E.C.P.D. methods whereby engineers who have met suitable standards may receive corresponding professional recognition. Upon recommendation of the committee, E.C.P.D. approved a definite policy as a guide in fulfilling the committee's purpose. This policy was outlined in an article "E.C.P.D. Committee on Professional Recognition Commented Upon by C. N. Lauer and Dean Barker," appearing in *ELECTRICAL ENGINEERING* for January 1934, p. 224-5. This program involves selection of proper material, its supervised education, intimate contact with the profession during the apprenticeship stage, and the attainment of definite specified educational requirements with concurrent recognition by professional societies, educational institutions, and state laws. The committee also has formulated a definition of an "engineer" which was approved by E.C.P.D., which voted to transmit it to the participating bodies for their discussion and approval. These minimum qualifications for an engineer also were given in the previously mentioned article in the January issue. At a recent meeting this committee adopted and recommended for approval "a practical program of certification covering the transition period, with progressive adjustment of requirements and successive tightening of standards, always keeping in view, as a goal, the early complete effectuation of the E.C.P.D. standards and program of individual certification as applied to new members of the profession."

It should be clearly understood that this program of E.C.P.D. is still in the formative stage and has not as yet been approved for adoption by the several sponsoring organizations. It cannot be adopted until it has the approval of the governing boards of all of those organizations. The proposals are receiving most careful and thorough consideration by the Institute's board of directors, but it would, of course, be premature to predict at this time what action the board will take. However, faced as we are, in many States, with licensing legislation, a uniform definition of an "engineer" and uniform procedures for certifying their eligibility appear highly desirable if a condition of chaos is to be avoided, and the professional standing of qualified engineers is to be uniformly recognized.

The problem of financing these activities has still to be worked out, but it is thought that they can be made self-supporting and at a social cost much less than would result from the alternative chaotic situation. It is not anticipated that the program will involve any direct expense to the Institute.

Internal Activities of the Institute

A lengthy discussion of Institute activities with which members are all familiar, such as its meetings, its publications, and its geographical District, Section, and Branch activities, is not included here. There are however 2 internal activities with which the membership at large have comparatively little direct contact, but whose personnel carry heavy responsibilities in promoting the effectiveness of the Institute in its service to its members. These are the Institute's committees and its headquarters staff.

There are 2 groups of standing committees.

GENERAL COMMITTEES

The general committees include the executive and finance committees and the board of examiners provided by the constitution, and 15 other committees dealing with the following subjects: technical programs, publications, co-ordination of Institute Activities, Sections, constitution and by-laws, Institute policy, headquarters, membership, standards, Edison medal, Lamme medal, award of Institute prizes, safety codes, code of principles of professional conduct, and Student Branches. In addition to these standing committees, special committees are appointed from time to time to consider matters not within the scope of the standing committees.

TECHNICAL COMMITTEES

There are 18 technical committees on the following subjects: automatic stations, communication, education, electrical machinery, electric welding, electrochemistry and electrometallurgy, electrophysics, instruments and measurements, applications to iron and steel production, production and application of light, applications to marine work, power generation, power transmission and distribution, protective devices, research, and transportation.

Any attempt to visualize the tremendous mass of work performed by these committees must be left to the reader's imagination. Some of course are more active than others, but many of them hold several meetings a year, and many of them have sub-committees which also hold independent meetings. Much work is done also by correspondence. The personnel of the general committees comprises about 200 men and the technical committees about 375. There are some duplications in these numbers but on the other hand there are probably many others working on sub-committees who do not appear in the published lists. It is probably safe to say that from 500 to 600 Institute members are actively engaged in committee work.

We should all bear in mind that these 500 or 600 men who are giving of their knowledge, experience, and energy for the benefit of the entire membership, are just members like ourselves. They pay no less in dues than other members and they receive no monetary compensation whatever for their committee work; in fact, in many cases it causes them additional expense. In spite of these facts, however, these 500 or 600 members who give their time and energy to committee work are the ones who are getting the most out of their Institute membership. This, however, does not alter the fact that the Institute and its members owe them a debt of gratitude. Without their contribution to its work the Institute could hardly function at all.

Of all the Institute committees, the one which has probably faced the most difficult task during the last 4 years has been

the finance committee of which E. B. Meyer is chairman. The finance committee has the task of fitting the Institute's expenses to its income, and with the reduction which this income has undergone, this committee has had most difficult problems to solve. How some of these problems have been met Mr. Meyer has told in his article "The Story of the Institute Budget" in the March 1934 issue of *ELECTRICAL ENGINEERING*, p. 375-81. Every member who has not already done so should read and study Mr. Meyer's article. Every member of the Institute should understand its financial problems and how they are dealt with and especially so if he ever feels inclined to criticize the distribution of its income.

It is true that in the past the opportunities for participation in technical committee work have been somewhat limited. However, under the leadership of I. Melville Stein of Philadelphia, chairman of the Institute Sections committee, a definite plan for Section participation in technical committee work has been proposed and is scheduled for discussion at the conference of officers and delegates at the coming midsummer convention. The plan is outlined in the April 1934 issue of *ELECTRICAL ENGINEERING*, p. 631. The plan provides an opportunity for every Section member desiring to do so to participate in technical committee work, and is worthy of careful consideration by every member of the Institute.

THE HEADQUARTERS STAFF AND ITS DUTIES

On May 1, 1902, 18 years after its organization, the Institute had a membership of only 1,549, and was the smallest of the 4 societies of civil, electrical, mechanical, and mining engineers. The very rapid increase in membership, after the establishment in that year of the provisions for Sections and Branches, made it the largest of the 4 societies less than 5 years later (4,000 members). (It retained that distinction until 1915). The rapid increase in membership, which continued at varying rates for many years and the accompanying expansions of the activities required the building up of a staff which would be able to render effectively all of the many types of services demanded of the headquarters of such a society.

With a membership of 3,027 in 1904 (May 1), the Institute had a staff of 10 persons. By 1917, the membership had increased to 8,710 (May 1) and the staff to 17. The membership of more than 18,000 which was maintained from the early part of 1926 until reductions were caused by the depression, and some further expansions in the activities, caused the total number of staff members to reach 36 in 1929.

On account of the decreased income, the acting national secretary and the office manager recommended some reductions in staff at the end of 1932, and did not fill a vacancy which occurred in 1933. These changes reduced the staff to a total number of 26. The reductions were made despite the fact that the revised publication plan required more persons in the editorial department than in 1929, and the fact that other essential parts of the work have been made materially heavier by the depression, notably correspondence regarding inability to pay dues, and the answering of many inquiries which result directly from the large amount of time many individuals have available.

Since 1904, the numbers of Sections and Branches have increased from 16 and 11, respectively, to 61 and 113. The number of committees has likewise been greatly increased, and the activities in general have been expanded in many directions.

Members of the staff carrying the principal responsibilities are:

H. H. HENLINE, national secretary
 F. A. NORRIS, officer manager
 G. ROSS HENNINGER, editor
 H. E. FARRER, secretary, board of examiners
 secretary, standards committee
 C. A. GRAEF, advertising manager
 C. S. RICH, secretary, technical program committee

Of these, it is worthy of note that Messrs. Henline and Henninger are Members and Messrs. Farrer and Rich, Associates of the Institute.

In addition, there are 4 editorial workers, 3 of whom are Associates; 3 junior clerks who perform a wide variety of duties, including addressograph, mimeograph, mailing, stock, and messenger services; and 13 other persons who are engaged in the entire range of work required of the staff.

The duties of the staff embrace a mass of detail work in connection with ELECTRICAL ENGINEERING and the TRANSACTIONS, advertising, the Year Book, the 61 Sections and 113 Branches, general administration, joint activities, secretarial and other work for committees, etc. These duties include editing and proof-reading, correspondence, record keeping, billing, indexing, preparation of annual and other reports, mailing, interviewing, arranging for meetings and conventions, accounting, filing, shipping, assistance in preparation of budget, and others too numerous to mention. A mere catalog of the specific services required of the staff comprises over 4 typewritten pages.

It always has been the practice to keep the staff at the minimum number of persons required for performing the necessary duties. Accounting, members' records, correspondence, and all other parts of the work have been kept on the simplest possible basis. The variety of duties required of the limited staff makes it essential that the assignments be arranged on a flexible basis. No member of the staff is limited entirely to one particular type of work, except in editorial and advertising, but each has been thoroughly trained in other duties, and practically all have had years of experience in Institute methods. Consequently, the distribution of duties can readily be shifted from day to day, and the services can be maintained with a minimum payroll cost per member of the Institute.

That the Institute is not overstaffed is indicated by a recent comparison of the staffs of the 4 large national engineering societies, which shows the following:

Total number of employees	A.I.E.E.	A.S.C.E.	A.I.M.E.	A.S.M.E.
	26	52	23	63

SECTIONS AND BRANCHES

Before concluding, a few statements should be made regarding the relationship of the Sections and Student Branches to the Institute. Student enrollment in the Institute was initiated in order that the young men training to become engineers might be kept informed as to the latest developments in the various fields of electrical engineering, so that their transition from student life to professional life might be made gradually rather than abruptly. It was felt that, by this means, these young men would be greatly assisted in "finding themselves" in the professional field, thereby not only accelerating their individual professional progress but also enhancing the standing of the profession as a whole. That this purpose is being accomplished will be readily admitted by any one who has attended a Student session at any of our meetings. The provision of student meet-

ings conducted on a professional basis by the Branches can add tremendously to the effectiveness of this development. The very moderate fees paid by Enrolled Students obviously do not cover the entire cost of this service, which includes sending ELECTRICAL ENGINEERING to each Enrolled Student, but the Institute has faith that the bread so cast upon the waters will return again after many days in the form of an enthusiastic membership imbued with the professional spirit. I think there is no service which the Institute renders that is more worthwhile.

Now as to the Sections; they were organized in order that a larger proportion of the Institute membership might have the opportunity, by meeting together, to promote the objectives of the Institute. These objectives imply, as already pointed out, an attitude of unselfish service to the profession, to the nation, and to the world. Now not all members of the Institute are fortunate enough to be able to participate in Section activities. Only about $\frac{2}{3}$ of the membership even resides in Section territory. Section members and officers might do well to remember this fact when they feel inclined to be dissatisfied with the degree of financial support accorded their activities, by the Institute. I am sure they would not want to feel that they were promoting their own local interests at the expense of other members unable to enjoy like privileges.

Now, of course, there are many Section activities which do, directly or indirectly benefit the Institute as a whole. Surely no one will deny the value to the Institute of the splendid work of the Section membership committees, and occasional social activities which assist in obtaining desirable members are, without doubt, of benefit to the Institute as a whole as well as to the individual Sections. No hard and fast rules can be laid down. The important thing is that members fortunate enough to be able to enjoy participation in Section activities might well bear in mind that after all, the principal functions and activities of the Institute must be carried out on a national, or perhaps I should say continental basis, and that in the long run the Section members will benefit most by so planning and conducting their Section affairs as to contribute to, as well as enjoy the benefits of these broader activities. They owe this much to that $\frac{1}{3}$ of the membership who help to pay their cost without being able to participate in them.

To sum up the whole matter, an insight into the "workings" of the Institute seems to reveal that its aims and activities are rooted in a spirit of mutual helpfulness to each other and disinterested service to humanity. Its officers, its headquarters staff and those who work on its committees all share in that spirit. The principal obligation of membership, it seems, is to cultivate that spirit, the possession of which, after all is said and done, yields the most lasting satisfactions of the professional life.

