

ANNUAL REPORT

American Institute of Electrical Engineers

33 WEST THIRTY-NINTH STREET, NEW YORK



REPORT OF THE BOARD OF DIRECTORS
FOR THE FISCAL YEAR ENDING
APRIL 30, 1921

Presented at the Annual Meeting of the American Institute of Electrical
Engineers, New York, May 20, 1921.

REPORT OF THE BOARD OF DIRECTORS FOR THE FISCAL YEAR ENDING APRIL 30, 1921

The Board of Directors of the American Institute of Electrical Engineers presents herewith to the membership its Thirty-seventh Annual Report, for the fiscal year ending April 30, 1921. A general balance sheet showing the condition of the Institute's finances, on April 30, 1921, together with other detailed financial statements, is included herein. The following is a brief summary of the principal activities of the Institute during the year; more detailed information has been published from month to month in the Institute JOURNAL.

Directors' Meetings.—The Board of Directors held nine regular meetings during the year; four of these were held in New York, one at White Sulphur Springs, W. Va., one at Philadelphia, one at Chicago, one at Akron and one at Pittsburgh.

Information regarding the more important activities of the Institute which have been under consideration of the Board of Directors, the committees, and the various officers, is published each month in the section of the JOURNAL devoted to "Institute Activities."

President.—During the year President Berresford has attended many Institute and Section meetings including the Annual and Midwinter Conventions and meetings in New York, Philadelphia, Chicago, Akron, Pittsburgh, Cleveland, Detroit-Ann Arbor, Indianapolis-Lafayette, Milwaukee, St. Louis and Schenectady.

Annual Meeting.—The Annual Business Meeting was held at Institute headquarters, New York, on May 21, 1920. The Annual Report of the Board of Directors for the fiscal year ending April 30, 1920, was presented as published in full in the July 1920 issue of the JOURNAL. The Tellers Committee presented its report upon the election of officers for the year beginning August 1, 1920.

Directly following the business meeting came the ceremony of the presentation of the Edison Medal to W. L. R. Emmet.

Annual Convention.—The Thirty-sixth Annual Convention was held at "The Greenbrier," White Sulphur Springs, W. Va., on June 29 to July 2, 1920. The arrangement of the program by which the five technical sessions were confined to four mornings and one evening session met

with commendation. Thirty-eight papers were presented at four of the five sessions, the first session being devoted to the Presidential address and the Technical Committee Reports. The annual conferences of the Sections Committee were held and thirty Sections of the Institute were represented by delegates. Among subjects discussed were the following: Geographical divisions; Section territorial limits; Section financial support, etc.

Pacific Coast Convention.—The Ninth Annual Pacific Coast Convention was held in Portland, Oregon, July 21-24, 1920. Eight technical papers were presented. Resolution adopted advocated the holding of 1921 Annual Convention in conjunction with Pacific Coast Convention at Salt Lake City, Utah.

Philadelphia Meeting.—The 364th Institute meeting was held in Philadelphia, October 8, 1920 and consisted of a celebration of the centenary of the discoveries of Oersted, Ampere, Arago and Davy, also a technical session at which two papers were presented.

Chicago Meeting.—The 365th Institute meeting was held in Chicago, November 12, 1920, under the joint auspices of the Chicago Section and the Protective Devices Committee, the Western Society of Engineers participating. Four papers were presented on "Lightning Protection."

Akron-Cleveland Meeting.—The 366th Institute meeting was held in Akron and Cleveland, January 14, 1921, under the joint auspices of the two Sections and the Industrial and Domestic Power Subcommittee on the Rubber Industry. At the technical session a symposium on "Electric Power in the Rubber Industry" was presented.

Mid-Winter Convention.—The ninth Mid-Winter Convention was held in New York on February 16-18, 1921. Total attendance more than 1000. Seventeen technical papers were presented during five technical sessions. The convention closed with the presentation of the Edison Medal to Dr. M. I. Pupin and a lecture by the medalist.

New York Meeting.—The 368th Institute meeting was held in New York on March 11, 1921. One technical paper was presented under the auspices of the Power Stations Committee.

Pittsburg Meeting.—The 369th Institute meeting was held in Pittsburg, April 16, 1921 under the auspices jointly of the Pittsburg Section and the Association of Iron and Steel Electrical Engineers. Three papers were presented during the two technical sessions.

Abstracts of the reports of the chairmen of many of the Institute delegations and committees are included herein under various headings.

Meetings and Papers Committee.—The Meetings and Papers Committee held meetings every month of the year except July and August.

The results of its work are set forth in the form of the list of meetings held, given elsewhere in this Report.

The policy of this committee has been considerably influenced this year by the state of the finances of the Institute which required economy in all the activities. The committee has endeavored to reduce the number of papers presented at the various "National" meetings and in some cases to substitute lectures or addresses by prominent engineers for the usual technical papers. A notable example of this was the Historical Memorial meeting in Philadelphia in November 1920. The December meeting was omitted. On the other hand the number of meetings of local sections has been very great, probably greater than in any preceding year.

The experience of this year has suggested to the committee two changes in practise in the interest of economy, raising of standards and equality of treatment of sections, which suggestions are offered for the consideration of the membership.

First: That hereafter the Meetings and Papers Committee establish a subcommittee within itself, to be known as its editing committee, whose duty it shall be to carefully scrutinize every paper accepted, with the object of reducing the volume to a minimum consistent with clearness, thus saving time at meetings, and space in the publications, and giving opportunity for the presentation of a greater number and variety of papers with less overlapping of matter by different individuals.

Second: That it be not attempted to hold "National" meetings every month of the season but that local Section meetings be encouraged by assigning to them a greater proportion of the papers offered through the Meetings and Papers Committee.

Coordination of Institute Activities.—At the beginning of the administrative year in August 1920, the Board of Directors appointed a "Committee on Coordination of Institute Activities", the duties of which are "to consider and advise on all questions arising as to Institute activities of whatever nature, particularly those in which uncertainty, difference of opinion, actual conflict, or duplication may appear to exist; and where questions of Institute procedure, policy, or precedent are involved, or final decision is necessary, to report the conditions to the Board with appropriate recommendations."

This Committee, which includes the Chairmen of several of the more important Institute Committees, held a number of meetings and reported its actions to the Board of Directors from time to time.

Among other subjects considered were the awarding of prizes to authors of worthy papers presented before the Institute, and later the formulation of the procedure to be followed in making awards, as published in the April and May issues of the JOURNAL.

Various matters relating to Institute Branches which had been referred to the Committee for consideration by the Directors were acted upon, and the recommendations of the Committee, after approval by the Directors, were forwarded to the various Branches.

Another important matter considered was the coordination of the Standardization activities of the Institute and the various joint organizations with which the Institute is affiliated. The Committee's recom-

mendations have been transmitted to the Directors and are scheduled to be acted upon at the May meeting.

Institute Prizes.—At various times the desirability of establishing prizes to be awarded by the Institute to authors of papers has been discussed.

The subject has again been active recently, and at a meeting of the Committee on Coordination of Institute Activities, resolutions were adopted and were approved at the January meeting of the Board of Directors and referred back to the Coordination Committee for the formulation of the necessary details of procedure in making the awards.

All papers presented at meetings of Sections of the Institute during the year 1921 by any member of the Institute who has never before presented a paper before the Institute or any of its Sections are eligible for this competition.

The Coordination Committee also considered a specific offer from the Jeffery-Dewitt Company to donate to the Institute \$100 each year for the purpose of establishing a prize for the best paper on a subject within the field of high-tension transmission and distribution. The Committee recommended that "the offer of the Jeffery-Dewitt Insulator Company be accepted as applying to an award for the calendar year 1921." The Board approved this recommendation and referred the matter back to the Coordination Committee for the purpose of formulating the necessary plan of procedure.

The procedure to be followed in connection with the award of prizes will be published in a later issue of the JOURNAL.

Publication Committee.—This Committee, which has supervision of the monthly JOURNAL and the annual TRANSACTIONS, has held several meetings during the year, has considered various matters relating to the Institute's publications, and has formulated the procedure regarding publication of papers, news items, reports, and other material in these publications.

The general policy, as formulated and recommended by the Committee on Development and approved by the Board of Directors in 1919, has been carried out to the extent that the available finances would permit. For more detailed information regarding the activities of this Committee, reference should be made to the publications issued during the past year, which practically constitute the report of the Committee.

Geographical Divisions.—The Special Committee on Geographical Divisions and Election Procedure, authorized in June 1920, studied in cooperation with the local Sections the question of grouping the membership into geographical districts. A plan was formulated, dividing the membership into ten districts, which was favorably acted upon by the Board at its November 1920 meeting. This plan was used as the basis for the nomination and election of Vice Presidents this Spring. For complete details see the December 1920 JOURNAL.

Sections and Branches.—The statement was made in the Report of the Board of Directors for last year that, "It may be inferred from the present term that there will be further increase of activities (Sections) next year" and results demonstrate the correctness of that inference. This is indicated partly by the figures given in the following table showing the number of Section meetings held and the attendance at them, but more particularly by the large increase in the number of Sections, an increase which is very much greater than in any previous year.

During the past year Sections have been organized at Akron, Ohio, Cincinnati, Ohio, Syracuse, N. Y., Omaha, Neb., Lehigh Valley with headquarters at Bethlehem, Pa., and Connecticut with headquarters at New Haven, Conn. This interest in Section activities shows, if the Sections may be considered one of the most important members of its body politic, that the Institute is in a very healthy condition.

In some cases the organization of these new Sections has led to controversies as to conflicting Section boundaries, but in all cases these difficulties have been amicably adjusted by the Sections interested.

There is a growing demand from the members residing in the more sparsely settled sections of the country for very much extended Section limits, and while each case as it has come up has been settled in its own merits some very serious thought should be given to amending the By-laws to take care of the situation.

Cooperation between the Sections of the Institute and those of other engineering societies, looking to the increase of the welfare of the members and a further development of their civic duties, has continued to increase and in many localities this has resulted in the engineers being called upon to take a more active part in civic affairs.

The Branches are now upon a healthful basis the equal or superior to that enjoyed before the war. Attendance is good and the meetings have been of particular interest due to the stimulus of the war in technical matters and the activity of students in presenting programs, as a result of their maturity and experience during the war. Programs involving papers and discussions presented by students are of the greatest interest and value, although contact with Institute officers is considered of utmost importance.

Social functions including banquets addressed by prominent engineers and representatives of the Institute, which have a materially broadening effect, have been generally adopted. The use of motion picture films illustrating industrial processes is becoming general.

Educational institutions, where several Branches are located, give partial credit toward graduation for work done in connection with study of the A. I. E. E. JOURNAL and presentation of papers at Branch meetings. In other institutions the JOURNAL is used for reference from which articles are abstracted for discussion at meetings and in the classroom.

The number of enrolled Students has greatly increased and new Branches have been authorized at Case School of Applied Science, Cooper Union, Virginia Military Institute and University of Southern California.

	For Fiscal Year Ending						
	May 1 1915	May 1 1916	May 1 1917	May 1 1918	May 1 1919	May 1 1920	May 1 1921
SECTIONS							
Number of Sections.....	31	32	32	34	34	36	42
Number of Section meetings held.....	246	251	265	245	217	262	303
Total Attendance.....	23,507	28,553	31,299	34,614	25,837	30,741	37,823
BRANCHES							
Number of Branches.....	52	54	59	59	61	62	65
Number of Branch meetings held.....	328	360	368	268	156	360	443
Attendance.....	12,712	15,166	16,107	10,683	6,441	16,827	21,629

Standards Committee.—The Standards Committee has held six regular meetings during the year for the transaction of its business. The final touches were given the new edition of the Rules which had been prepared during the two preceding years under Chairman Robinson. The edition is now available.

A difference arose over the phraseology and interpretation of certain definitions in the telephone section of the Rules, but the Committee was fortunate in being able to adjust this in a meeting at which representatives of the National Electric Light Association and the American Telephone and Telegraph Company attended. The adjustment received approval from the Board of Directors and is embodied in the new edition of the Rules.

As some differences of interpretation of the Rules on rating of electrical machinery seemed possible, the Committee (with the approval of the Board of Directors) is responsible for the formation of a Sectional Committee under the procedure of the American Engineering Standards Committee so that differences, if any, may be thrashed out and the interpretations be fully established.

The Institute is also represented on Sectional Committees on Terminal Markings of Electrical Machinery and on Specifications for Insulated Wires and Cables for other than Telephone and Telegraph Purposes.

A request from the Committee that the A. I. E. E. be made sponsor for the formulation of a Standard of Aluminum for Conducting Purposes has been approved by the Board of Directors and forwarded to the American Engineering Standards Committee.

The Committee has given much consideration to the relation of the Standards Rules of the Institute as a whole, to the procedure of the American Engineering Standards Committee, and by direction of the Board of Directors the matter is now in the hands of the Committee on Coordination of Institute Activities, who will report recommendations on the situation.

The opinion of the Standards Committee that the A. I. E. E. is the appropriate body to be sponsor for Standards Rules and definitions in all electrical engineering matters, as defined in Section 28 of the By-laws has been expressed in a series of resolutions which were adopted by the Committee and transmitted to the Board of Directors.

Subcommittees of the Standards Committee have been active in work. A new Subcommittee on Insulators was appointed during the course of the year. Special committees on magnetic units, nomenclature and other pertinent subjects have also been active and have produced important reports.

American Engineering Standards Committee.—In the very rapid increase of the activities of the American Engineering Standards Committee during the past year the following facts stand out: The By-laws, and Rules of Procedure have been completely revised and expanded; many additional bodies have been admitted to representation on the Committee, until it is now composed of 49 members representing 17 bodies or groups of bodies, including 6 national engineering societies, 5 government departments and 13 national industrial associations; the Committee is now in cooperative touch with 10 similar foreign organizations. Eight standards have been officially approved, 9 more submitted for approval, and 36 active projects are in hand.

The Annual Report of the Committee for the year 1920 is now available; an abstract was printed in the May JOURNAL.

U. S. National Committee of the I. E. C.—This Committee has held several meetings during the year. Its work has been interfered with, somewhat by the inactivity of the International Commission during the last year. It was expected that the meetings of the I. E. C. National Committees, held at Brussels, March 27th to April 4th, 1920, would be followed soon by various other meetings of the Advisory and Special Committees of the I. E. C., including a meeting of the Committees on International Electrical Vocabulary and Graphical Symbols, which was to have been held at Zurich, in June, 1920, and meetings of the Advisory Committee on Rating of Electrical Machinery, which was to have been held at Paris, in December, 1920. These meetings and also meetings of other Advisory Committees, including the Advisory Committee on Standard Pressures, Symbols, Nomenclature, and also Screw Lamp Sockets and Bases, have had to be postponed for various reasons and the date for holding them has not yet been set. The Committee, which has always taken a leading part in the work of the Advisory Committee on Rating of the Commission, has found it desirable to suspend its work in the preparation of new proposals to the Commission, so as to have the benefit of the comprehensive study now being made of the entire question of the rating of electrical machinery by the A. E. S. C. Sectional Committee on Rating of Electrical Machinery, which was recently formed by the A. E. S. C. on the initiative of the A. I. E. E. Standards Committee, the latter Committee being the sponsor body for that Sectional Committee.

The Committee, with the approval of the Board of Directors, has, during the last year, effected changes in its organization, for the purpose of allow-

ing other electrotechnical bodies, such as the Electric Power Club, the National Electric Light Association, etc., to have official representation in the Committee and to help meet its expenses. This cooperation of other electrotechnical bodies, which is in accordance with the plan of organization of several of the European National Committees of the I. E. C., will add to the influence and facilities of the U. S. National Committee, and will react favorably upon its activities and upon its work.

Research Committee.—The Research Committee of the Institute, appointed at the January 1921 meeting of the Board, held its first meeting on Friday, April 1st. As this committee was created primarily to act as the Advisory Board on Electrical Engineering of the Engineering Division, National Research Council, much of the discussion at this meeting consisted of the presentation of possible fields of activity. A committee of five was appointed to consider and report on all suggestions submitted.

Committee on Code of Principles of Professional Conduct.—Through correspondence and conference the Institute's Committee, upon invitation from the corresponding Committee of the American Society of Mechanical Engineers, has suggested modifications in the proposed Code of Ethics for that Society.

Committee on Safety Codes.—The Chairman of the Committee on Safety Codes continued to represent the Institute on the Electrical Committee of the National Fire Protection Association. A committee was formed, under the American Engineering Standards Committee, for the preparation of a standard elevator code; the Institute is represented by a member of the Codes Committee and sessions are in progress. A member of the Codes Committee also represents the Institute on an American Engineering Standards Sectional Committee on Floor Openings, Railings and Toe Boards.

American Committee on Electrolysis.—The Institute representatives on the American Committee on Electrolysis have attended several meetings, either of the main committee or of the various subcommittees, during the year.

The result of the work of the subcommittees was considered by the main committee in New York recently, and a report agreed upon, which will probably be issued in the near future, after consideration by the associations represented on the main committee.

Board of Examiners.—The Board of Examiners during the year held fifteen meetings, averaging over three hours each. It considered and referred to the Board of Directors a total of 4336 applications for admission or transfer to the higher grades. This is an increase of about 33% over last year.

The policy of dividing the work among subcommittees, as adopted last year was continued. Final action in all cases was taken by the entire Board and all doubtful or borderline cases were referred for con-

sideration to the Board as a whole. The growth of the Institute is becoming so rapid that it is only through such a division of work among subcommittees of the Board that it is possible to keep the required number of meetings within reasonable limits.

The result of the Board's work for the year is given in the following tabulated statement:

APPLICATIONS FOR ADMISSION

Recommended for grade of Associate.....	2293	
Not recommended.....	4	2297
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Recommended for grade of Member.....	126	
Not recommended for admission to this grade.....	76	202
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Recommended for grade of Fellow.....	5	
Not recommended for admission to this grade.....	14	19
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Recommended for enrolment as Students.....	1475	
Not recommended for enrolment.....	3	1478
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APPLICATIONS FOR TRANSFER

Recommended for grade of Member.....	237	
Not recommended for transfer to this grade.....	44	281
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Recommended for grade of Fellow.....	49	
Not recommended for transfer to this grade.....	10	59
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Total number of applications considered.....		4336
Applications reconsidered.....		6
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Total.....		4342

Membership.—In spite of the strenuous financial conditions of the past year the Membership Committee by earnest effort has greatly exceeded the results secured during the years ending May 1, 1919 and May 1, 1920 both of which were banner years.

Of the 37 sections existing August 1, 1920, 14 have sent in applications in excess of 25% of their membership as of that date.

During the five years ending May 1, 1918 the net increase was only 1628, an average of 336, while the years ending May 1, 1919 and May 1, 1920 showed net increases of 970 and 1093 respectively. The year ending May 1, 1921 shows a net increase of 1870 or an 71% increase over the preceding banner year.

The total applications received were 2442 as compared with 2033 last year and 1596 the year before.

	Honorary Member	Fellow	Member	Associate	Total
Membership, April 30, 1920.	6	498	1615	9226	11345
Additions:					
Transferred.....		45	225		
New Members Qualified....		5	124	2218	
Reinstated.....		3	6	78	
Deductions:					
Died.....		3	6	46	
Resigned.....		4	12	138	
Transferred.....			35	235	
Dropped.....		3	14	338	
Membership, April 30, 1921..	6	541	1903	10765	13215

Net increase in membership during the year.....1870

Deaths.—The following deaths have occurred during the year.

Fellows: James Mitchell, Cecil P. Poole, Samuel Sheldon.

Members: Donald Bowman, Louis H. Flanders, Richard Lamb, F. A. Pickernell, Nathan C. Solomon, Joel W. Stearns.

Associates: Edwin G. Birren, Charles Blizard, G. J. G. Brandt, D. W. Burnham, Willard L. Candee, Joseph F. Chinlund, Leser R. S. Cohen, H. J. Conover, Leigh R. Crawford, J. Hubert Davies, George M. Denniss, G. B. Diem, Timothy S. Eden, Charles G. Edwards, Axel Ekstrom, John Ellis, Horace S. Geutsch, E. S. Fletcher, Albert H. Foote, Lewis T. Glaser, Oscar Hansen, Philip E. Hart, O. B. Hodgson, Henry Hovelson, Arnold Keller, Jr., Frederick R. Keller, William H. Knierim, G. H. Lukes, William A. Lynn, W. T. Masters, Angus K. Miller, James R. Nelson, Albert A. Nimis, George M. Parsons, James B. Rogers, J. A. Runchey, E. D. N. Schulte, Kenneth L. Scranton, E. M. Shepard, Jr., E. F. Sherwood, M. M. Shrader, Maurice N. Shugren, George L. Thompson, Louis E. Waugh, R. S. Whitright, H. Wygod-Wygodsky.

Total deaths, 55.

Employment Service.—The employment service which has been maintained for many years at Institute headquarters and which during the latter part of 1918 was coordinated with the similar service of the other Founder Societies, was transferred to the auspices of the newly organized American Engineering Council on January 1, 1921 upon the recommendation of the secretaries, and the Joint Finance Committee, of the four Founder Societies. It is to be carried on under the auspices of the Council by a board consisting of the secretaries of all the societies represented in The Federated American Engineering Societies. At present the secretaries of the National Societies of Mining, Mechanical

and Electrical Engineers are acting as a special managing committee on the request of Council.

In addition to a direct service, the Bureau publishes an engineering service bulletin each month in the Institute JOURNAL and it has served to place many members in positions of responsibility, both in this country and abroad. The bulletin is subdivided into two parts: one containing announcements of vacancies, and the other containing lists of men available, with condensed records of their experience. All announcements are published without charge either to the employers or to the members of the Institute seeking positions.

The Federated American Engineering Societies.—A very harmonious transfer was made of the activities of Engineering Council beginning with the first of this year. American Engineering Council has both largely succeeded to the reputation and benefits of its predecessor and has the added advantage of a more democratic organization, a wider support and far greater publicity. Attendance at meetings has been uniformly large, the spirit of cooperation very strong, and the willingness to devote time and energy to the work of Council most gratifying. It is believed the Institute has taken a wise step in this organization and support should be continued.

In addition to the organization meeting held in Washington, D. C., in November 1920, the Executive Board held meetings subsequently in New York in December; in Syracuse in February, and at Philadelphia in April.

Institute members have been appointed to the following offices and committees: H. W. Buck, member Standing Committee on Publicity and Publications; Professor Charles F. Scott, member of Committee on Constitution and By-Laws; L. B. Stillwell, member of Committee on Public Affairs; William McClellan, Chairman of Finance Committee; Calvert Townley, ranking Vice-President, Chairman of Committee on Procedure and member of Finance Committee.

Complete details of organization of the Federated body were given in the December 1920 JOURNAL, and its activities have been liberally chronicled from month to month.

United Engineering Society.—This Society performs for the national societies of Civil, Mining, Mechanical and Electrical Engineers, certain specific acts which are governed by contracts; the primary function of the United Society being to hold in trust and to administer for these societies the Engineering Societies Building, in which the headquarters of the National societies are located.

Extracts from the annual financial report of the United Engineering Society were published in the March 1921 JOURNAL.

Engineering Societies Library.—The library of the Institute is combined with the libraries of the national societies of Civil, Mining and Mechanical Engineers, administered as the "Engineering Societies Library" under the direction of the Library Board of the United Engineering Society; this board is composed of representatives of each of the four societies referred to above.

In order to place the facilities of the library at the disposal of persons residing at a distance from New York, a Library Service Bureau has been established, and a staff of expert searchers and translators is employed to cover almost any engineering topic, in the following manner: abstracting, translating, bibliographing, statistical searches and reports, searches for patent purposes, copying, preparing reference cards, etc.

An abstract of the annual report of the Engineering Societies Library covering the calendar year 1920, was published in the March 1921 JOURNAL.

Engineering Foundation.—Engineering Foundation is a trust fund established in 1914 by Ambrose Swasey, of Cleveland, Ohio, by gifts to United Engineering Society as a nucleus of a large endowment "for the furtherance of research in science and in engineering, or for the advancement in any other manner of the profession of engineering and the good of mankind." It is administered by the Engineering Foundation Board upon which the Institute and other national engineering societies are represented. The Board is a Department of United Engineering Society.

The annual report of the Engineering Foundation for the sixth year, ending February 10, 1921, was published in the April 1921 JOURNAL.

Representatives.—The Institute has continued its representation upon various national committees and other local and national bodies with which it has been affiliated in past years, and in addition has appointed representatives upon a number of new organizations such as American Engineering Council and various Sectional Committees of American Engineering Standards Committee. A complete list of representatives is published frequently in the JOURNAL.

Edison Medal.—The Edison Medal for 1919, which was awarded to W. L. R. Emmet "For Inventions and Developments of Electrical Apparatus and Prime Movers" was presented to Mr. Emmet with appropriate ceremonies at the Annual Meeting of the Institute held in New York on May 21, 1920.

The Edison Medal for 1920 was awarded to Dr. Michael I. Pupin "For Work in Mathematical Physics and its Application to Electrical Transmission of Intelligence". The presentation ceremonies took place at the closing session of the Midwinter Convention of the Institute, New York, February 18, 1921.

John Fritz Medal.—The John Fritz Medal Board of Award, which is composed of representatives of the national societies of Civil, Mining, Mechanical and Electrical Engineers, awarded the 1921 medal to Sir Robert Hadfield for the invention of manganese steel. It is planned that a delegation of engineers representing the four societies make the presentation in London during the month of June.

Finance Committee.—During the year the committee has held monthly meetings, has passed upon the expenditures of the Institute for various purposes, and otherwise performed the duties prescribed for it in the Constitution and By-laws.

Haskins and Sells, certified public accountants, have audited the books, and their report follows:

NEW YORK
CHICAGO
PHILADELPHIA
DETROIT
CLEVELAND
SAINT LOUIS
BOSTON
BALTIMORE
PITTSBURGH
SAN FRANCISCO
LOS ANGELES
BUFFALO
CINCINNATI
NEW ORLEANS

HASKINS & SELLS

CERTIFIED PUBLIC ACCOUNTANTS
CABLE ADDRESS "HASKSELLS"
30 BROAD STREET
NEW YORK

KANSAS CITY
SEATTLE
PORTLAND
DENVER
ATLANTA
DALLAS
SALT LAKE CITY
TULSA
WATERTOWN
LONDON
PARIS
HAVANA
SHANGHAI

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

CERTIFICATE OF AUDIT

We have audited the books and accounts of the American Institute of Electrical Engineers for the year ended April 30, 1921, and

WE HEREBY CERTIFY that the accompanying General Balance Sheet properly exhibits the financial condition of the Institute at April 30, 1921, that the Summary of Income and Profit & Loss for the year ended that date is correct, and that the books of the Institute are in agreement therewith.

HASKINS & SELLS,
Certified Public Accountants.

NEW YORK,
May 14, 1921.

AMERICAN INSTITUTE OF
GENERAL BALANCE SHEET,

EXHIBIT A.

ASSETS

REAL ESTATE:

One-fourth Interest in United Engineering Society's Real Estate,
25 to 33 West 39th Street:

Land and Building..... \$472,500.00
Real Estate Equipment..... 14,292.79

Total Real Estate..... \$486,792.79

EQUIPMENT:

Library—Volumes and Fixtures..... \$ 40,204.99
Works of Art, Paintings, etc..... 3,001.35
Office Furniture and Fixtures..... 13,853.36

Total..... \$ 57,059.70
Less Reserve for Depreciation..... 9,470.07

Remainder—Equipment..... 47,589.63

INVESTMENTS:

City of Wilmington, Delaware, 4½% bonds, 1934, Par Value
\$15,000.00 (Pledged as Collateral to Loan Payable)..... \$ 15,677.77

United States Third Liberty Loan 4½% bonds..... 10,000.00

Total Investments..... 25,677.77

WORKING ASSETS:

Publications entitled "Transactions," etc..... \$ 12,906.50
Text and Cover Paper..... 478.63

Paper for Volume 39..... 2,000.00
Badges..... 2,238.61

Total Working Assets..... 17,623.74

CURRENT ASSETS:

Cash..... \$ 4,939.25
Notes Receivable—Advertisers..... 530.00

Accounts Receivable:

Members—for Dues..... 10,167.71
Advertisers..... 3,868.61

Miscellaneous..... 1,106.30

Accrued Interest on Investments..... 109.38
Accrued Interest on Bank Balances..... 105.10

Total Current Assets..... 20,826.35

FUNDS:

Life Membership Fund:

Cash..... \$1,438.67

Chicago, Burlington & Quincy Railroad Company
Bonds, 4%, 1958, Par Value \$5,000.00..... 4,868.75

Accrued Interest..... 33.33 \$ 6,340.75

International Electrical Congress of St. Louis—

Library Fund:

Cash..... \$ 417.56

New York City Bonds, 4½%, 1957, Par Value,
\$2,000.00..... 2,229.57

New York Telephone Company Bond, 4½%, 1939,
Par Value \$1,000.00..... 878.75

Accrued Interest..... 67.50 3,593.38

MAILLOUX FUND:

Cash..... \$ 231.60

New York Telephone Company Bond, 4½%, 1939,
Par Value..... 1,000.00

Accrued Interest..... 22.50 1,254.10

Midwinter Convention Fund—Cash..... 462.26

Total Funds..... 11,650.49

Total..... \$610,160.77

NOTE: No provision has been made for depreciation of real estate.

ELECTRICAL ENGINEERS.

APRIL 30, 1921.

LIABILITIES

CURRENT LIABILITIES:

Accounts Payable—Subject to Approval by the Finance Com-
mittee..... \$ 12,132.18

Loan Payable and Accrued Interest..... 10,155.00

Due to United Engineering Society on Account of Building
Addition, Including Accrued Interest..... 5,084.40

Dues Received in Advance..... 4,423.93

Entrance Fees and Dues Advanced by Applicants for Mem-
bership..... 473.21

Total Current Liabilities..... \$ 32,268.72

FUND RESERVES:

Life Membership Fund..... \$6,340.75

International Electrical Congress of St. Louis Library Fund..... 3,593.38

Mailloux Fund..... 1,254.10

Midwinter Convention Fund..... 462.26

Total Fund Reserves..... 11,650.49

SURPLUS: Per Exhibit "B"..... 566,241.56

Total..... \$610,160.77

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

SUMMARY OF INCOME AND PROFIT AND LOSS

FOR THE YEAR ENDED APRIL 30, 1921.

EXHIBIT B.

REVENUE:

Entrance Fees.....	\$ 12,768.00	
Dues.....	*137,147.71	
Students' Dues.....	9,207.00	
Transfer Fees.....	2,575.00	
Advertising.....	56,545.62	
Subscriptions.....	6,595.08	
Sales of "Transactions," etc.....	4,356.69	
Badges Sold.....	\$ 7,377.75	
Less Cost.....	6,794.16	583.59
Interest on Investments.....	1,100.00	
Interest on Bank Balances.....	770.93	
Interest on Notes Receivable.....	12.35	
Total.....		\$231,661.97

EXPENSES:

Publications:

Journal.....	\$88,787.34	
Transactions.....	34,339.05	
Year Book.....	7,416.88	\$130,543.27
Meetings.....	9,804.62	
Administrative Expenses.....	41,496.39	
Sections Committee.....	20,563.89	
Law Committee.....	196.50	
Membership Committee.....	4,306.17	
Standards Committee.....	1,054.52	
Finance Committee.....	150.00	
Code Committee.....	60.00	
Committee on Institute Development.....	1,122.54	
International Electrotechnical Commission.....	263.20	
Interest on United Engineering Society Building Loan.....	206.49	
President's Special Appropriation.....	303.15	
Honorary Secretary.....	4,000.00	
American Engineering Standards Committee.....	1,500.00	
John Fritz Medal Award.....	145.44	
Engineering Societies Employment Bureau.....	2,000.00	
Engineering Council.....	3,333.28	
Engineering Societies Library:		
Maintenance.....	\$ 4,500.00	
Recataloging.....	2,499.96	6,999.96
Forward.....	\$228,049.42	\$231,661.97

*Includes \$56,725.00, applicable to subscriptions to the JOURNAL.

TOTAL REVENUE—Forward).....		\$231,661.97
EXPENSES—(Forward).....	\$228,049.42	
United Engineering Society, Assessment.....	5,080.00	
Federated American Engineering Society.....	9,000.00	
Interest on Loan Payable.....	155.00	
Headquarters Committee.....	47.18	
Amortization of Premium on City of Wilmington Bonds.....	52.14	
Total.....	\$242,383.74	
Less Decrease in Accounts Payable for Expenses Undistributed..	452.67	
Remainder—Expenses.....		241,931.07
NET LOSS.....		\$ 10,269.10
OTHER PROFIT & LOSS CHARGES:		
Uncollectible Dues Written off.....	\$ 3,221.50	
Office Furniture and Fixtures discarded.....	401.52	
Total.....		3,623.02
GROSS DEFICIT.....		\$13,892.12
PROFIT AND LOSS CREDIT—ADJUSTMENT OF INVENTORY OF LIBRARY VOLUMES AND FIXTURES, APRIL 30, 1920.....		50.44
DEFICIT FOR THE YEAR.....		\$ 13,841.68
SURPLUS, MAY 1, 1920.....		580,083.24
SURPLUS, APRIL 30, 1921.....		\$566,241.56

NOTE: No provision has been made for depreciation of real estate.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS FOR DESIGNATED
PURPOSES, FOR THE YEAR ENDED APRIL 30, 1921.

EXHIBIT C.

RECEIPTS:

Life Membership Fund.....	\$258.08
International Electrical Congress of St. Louis Library Fund—Interest and Royalties.....	136.55
Mailloux Fund—Interest.....	45.00
Midwinter Convention Fund.....	339.16
Total.....	<u>\$778.79</u>

DISBURSEMENTS:

Life Membership Fund.....	<u>\$258.08</u>
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RECEIPTS AND DISBURSEMENTS PER MEMBER.

During each fiscal year for the past eight years.

Year ending April 30.....	1914	1915	1916	1917	1918	1919	1920	1921
Membership, April 30, each year.....	7876	8054	8212	8710	9282	10252	11345	13215
Receipts per Member.....	\$14.08	\$14.06	\$13.62	\$13.30	\$13.17	\$13.18	\$15.01	\$17.87
Disbursements per Member	12.86	13.54	13.74	12.75	11.99	12.92	15.62	18.90
Credit Balance per Member	\$1.22	\$.52	*\$.12	\$.55	\$1.18	\$.26	*\$.61	*\$1.03

Respectfully submitted for the Board of Directors,

F. L. HUTCHINSON, *Secretary.*

New York, May 20, 1921.