

39th Annual Convention Program

of

American Institute of
Electrical Engineers



CONVENTION HEADQUARTERS

SWAMPSCOTT, MASS.

JUNE 25-29, 1923



Program

39th Annual Convention

JUNE 25-29, 1923

A Cordial Welcome Is Extended to All
If You Have Not Registered Do So At Once
Enrollment for Sports and Trips Is Also Important
Each Day A Bulletin Will Be Issued—Get One

Monday, June 25

Registration. MORNING

All delegates and guests upon arrival are requested to register promptly at the special booth provided at Convention headquarters, where they will be provided with badges and with the latest pertinent information regarding the Convention. Ladies, upon registration, will receive tickets for automobile trips. Registration every day—no charge.

10:00-12:30 A. M.—Meeting of Section Delegates and Officers.

The primary purpose of the Conference is to provide contact between Institute officers and the membership at large as represented by its appointed delegates to the end that there may result an interchange of constructive opinion.

All members of the Institute are welcome and have the privilege of the floor, although only delegates may vote.

The session will open with short addresses by President Jewett and President-elect Ryan, followed by reports on matters previously discussed. Thereafter, the main business will be the consideration of the functions and possibilities of the district organization, including the desirability of co-ordinated district activities.

At the close of the main conference, separate conferences are planned of the delegates present from each of the ten geographical districts of the Institute for the purpose of discussing their specific problems in the light of the facts brought out in the general conference.

AFTERNOON

2:00-5:00 P. M.—Meeting of Section Delegates. Also Meetings of District Delegates.

2:00 P. M.—Inspection Trip to River Works of the G. E. Co., Lynn. (See page 18.)

2:00 P. M.—Inspection Trip to West Lynn Works of G. E. Co. (See page 18.)

2:15 P. M.—Automobile Trip to Salem and Marblehead. (See page 18.)

2:30 P. M.—Automobile Trip to Boston, with trip to top of Custom House Tower. (Elevator Service.) (See page 19.)

EVENING

8:30 P. M.—Informal Reception and Dance.

A committee, composed of several delegates and their wives, will arrange for Convention visitors to meet one another in an informal reception, which will be followed by an informal dance.

Tuesday, June 26

MORNING

- 9:00 A. M.—Social Hour.
- 10:00 A. M.—Greetings.
- 10:10 A. M.—Presidential Address by Frank B. Jewett.
- 10:30 A. M.—First Technical Session.

1. *Cable Charge and Discharge*, by C. P. Steinmetz, Chief Consulting Engineer, General Electric Co.
2. *Dielectric Strength Ratio between Alternating and Direct Voltages*, by J. L. R. Hayden and W. N. Eddy, both of General Electric Company.
3. *Cable Geometry and the Calculations of Current Carrying Capacity*, by D. M. Simons, Standard Underground Cable Company.

AFTERNOON

- 1:00 P. M.—Golf Event No. 1—Kicker's Handicap (18 Holes)—Open to Members and Guests.

An unknown number between 80 and 85, inclusive, will be drawn after players have finished. Players choose a handicap, which, when deducted from medal score, will make the net come within this range. The player whose net score most nearly equals this blind bogey will be the winner. (See Rules on Golf, page 15.)

- 2:00-6:30 P. M.—Inspection Trip to L Street Power Station, via boat across the harbor, Navy Dry Dock and Army Base. No charge for boat trip.

The inspection trip to L Street Station will be by steamboat from Nahant, direct to a wharf of the L Street Station, passing by Boston Light and viewing the islands in the upper harbor. This trip will also include a visit to the Army Base and a view of the Navy Dry Dock, the largest in the country. If time permits, the boat on returning will pass by the site of the new Weymouth Generating Station of The Edison Electric Illuminating Company of Boston.

- 2:00 P. M.—Inspection Trip to River Works of the General Electric Company, Lynn. (See page 18.)

- 2:00 P. M.—Inspection Trip to the West Lynn Works of the General Electric Company. (See page 18.)

- 2:10 P. M.—Inspection Trip to Creighton's Shoe Factory at Lynn, Mass.

An inspection trip to the A. M. Creighton Shoe Factory in Lynn will enable the delegates and visitors to see the most up-to-date shoe factory in this center of the industry. This factory turns out very high-grade women's shoes and has all the latest shoe-making machines for manufacturing the modern shoe.

- 2:15 P. M.—Automobile Drive along North Shore.

This trip covers a very picturesque ride, starting at Swampscott, and passing along the famous North Shore through Salem, Beverly, Prides Crossing, Magnolia, Manchester-by-the-Sea, and Gloucester, returning by way of Essex, Hamilton and Wenham.

Many beautiful summer residences are to be seen on this trip. The roads are exceptionally fine. Pleasant views, alternating first with rocky sea shore and then with hilly woodlands may long be remembered. The towns are famous for their historical and quaint New England features.

The estates of the late Henry Clay Frick, Judge Moore and Major Gardner are located along the North Shore. The Essex County Country Club, where ex-President Taft spent many summers, is situated between Beverly Farms and Manchester.

- 2:15 P. M.—Tennis Tournament—Preliminary.

This tournament will be of a quality to justify all tennis-playing members in bringing their complete tennis equipment to the Convention. Boston is one of the tennis centers of the country. Prizes will be awarded to winner and runner-up. (See Rules on Tennis, page 17.)

- 2:30 P. M.—Automobile Trip to Boston with View from Top of Custom House Tower. (Elevator service.) (See page 19.)

- 5:00 P. M.—Afternoon Tea.

Tea will be served at the small tables in the Tea Room of the New Ocean House. The Tea Room commands an excellent view of the ocean, looking toward the Boston Harbor lighthouses.

EVENING

- 8:30 P. M.—Presidents' Reception and Dance.

Dr. Frank B. Jewett, President of the Institute, and Mrs. Jewett will receive the delegates and guests in the Ball Room of the New Ocean House. Dr. and Mrs. Jewett will be assisted by the Past-Presidents, the President elect, the Institute Secretary and their wives. Dancing in the ball room will follow the reception. Music by the New Ocean House Summer Orchestra.

- 9:00 P. M.—Special Illumination.

The illumination effect will be novel and unique, embracing outline illumination with the latest types of applied colors and translucent



Night Illumination of Headquarters

lighting of towers combined with flood-lighting of various kinds. The grounds and veranda are to be softly lighted with subdued colors from luminaires, specially designed for the occasion, and contrasted against the vari-colored beams of a battery of searchlights, which will serve to enhance the naturally beautiful marine view of a rocky coast. Numerous festoons of colored flags and pennants will be strung from the hotel and brilliantly lighted from concealed sources. There will be a chameleoscopic lighting effect produced by a unit of original design—a rich combination of art and illumination; also the vividaire emblem which will add a new and striking feature to the display.

Throughout the decorations of the hotel and grounds, the emblem of the Society and its colors—blue, maroon, and gold—will predominate in both day and night effects.

On one or more evenings of the Convention, a demonstration will be made of the giant Mazda incandescent lamp, recently developed by the Lamp factories. These lamps consume 30,000 watts each. One unit will be suspended high above the grounds to afford an opportunity for all to see the illuminating effect produced by the largest specimen of its kind.

- 9:30-11:30 P. M.—Demonstration of Public Address System with Telephone Lines.

During the evening, the tea room of the New Ocean House will have tables arranged for service of refreshments. Music from the Copley Plaza Orchestra will be transmitted over special circuits and delivered in the tea room and on the veranda and grounds on the Public-Address System which is to be installed for the benefit of A. I. E. E. delegates and visitors during Convention.

Wednesday, June 27

MORNING

- 9:00 A. M.—Social Hour. Stunts by Nahant Life Saving Guard.

The first hour in the morning will be devoted to getting acquainted, with some special stunts guaranteed by the Entertainment Committee.

- 10:00 A. M.—Second Technical Session (Parallel Session).

4. *Some Engineering Features of the Weymouth Station*, by I. E. Moulthrop, Edison Elec. Ill. Co., and Joseph Pope, Stone & Webster, Inc.
5. *Cooling of Electric Machines*, by G. E. Luke, Westinghouse Elec. & Mfg. Co.
6. *Free and Forced Convection of Heat in Gases and Liquids*, by C. W. Rice, General Electric Co.

- 10:00 A. M.—Third Technical Session.

7. *Electrical Plant of Transoceanic Radio Telegraphy*, by E. F. W. Alexanderson, A. E. Reoch and C. H. Taylor, all of Radio Corporation of America.
8. *Transatlantic Radio Telephony*, by H. D. Arnold, Western Electric Co., and L. Espenschied, American Tel. & Tel. Co.

9. *Frequency Measurements in Electrical Communication*, by J. W. Horton, N. H. Ricker and W. A. Marrison, all of Western Electric Co.

10. *Telephone Equipment for Long Cable Circuits*, by C. S. Demarest, American Tel. & Tel. Co.

11. *Electrical Loud Speakers*, by A. Nyman, Westinghouse Elec. & Mfg. Co.

AFTERNOON

- 1:00 P. M.—Golf Event No. 2—Four-Ball, Best Ball, Medal Play (18 Holes)—Open to Members and Guests.

This will be a Scotch foursome event. Players will choose partners and will make up parties of four. Each will play his own game, and will keep full score exactly as it occurs and will HOLE ALL PUTTS. The best hole score of either partner on a team will be added up for their eighteen-hole total, and from this will be deducted one-half the combined handicap of the two partners. The pair of players having the lowest net score will be the winners. Equal prizes to each partner. (See Rules on Golf, page 15.)

- 2:00 P. M.—Inspection of both General Electric Works at Lynn. (See page 18.)

- 2:00 P. M.—Inspection Trip to Massachusetts Ave. Service Building of The Edison Electric Illuminating Co., and to Beacon Street Substation.

An inspection trip to the Service Building group of the Boston Edison Company, situated on Massachusetts Avenue, will comprise a visit through the supply and stock rooms, the garage, and the testing laboratories. There will also be an opportunity to visit the recreation buildings, which include the restaurant, electric kitchen, library, dormitories, and the poolroom and bowling alleys. If time permits, the delegates and visitors will be taken through one of the modern substations of the Edison Company on Beacon Street. This substation is a combination A.C. and D.C. distribution center.

- 2:00 P. M.—Visit to Massachusetts Institute of Technology.

The Massachusetts Institute of Technology winter session will have been finished before the A. I. E. E. Convention opens, and the summer school will not yet have started; but the laboratories and the buildings will be opened for inspection. Among the interesting features are the Steam Laboratory, including a 24,000 gallon per minute pump and canal for hydraulic measurement. There are also the Testing Materials Laboratory, the Dynamo Laboratory, the Electrical Measurements Laboratory, and the Electrical Research Laboratory. Of particular interest is the apparatus for the Coker method of investigating mechanical stresses by photo elasticity.

- 2:00 P. M.—Inspection Trip to Simplex Wire & Cable Company, Cambridge.

An inspection trip to the Simplex Wire & Cable Company will afford the opportunity of viewing the following processes: Tinning and stranding of copper conductors; Application of insulating materials; Cabling of insulating conductors; Braiding, lead covering and armoring of cables; Testing of cables.

THIRTY-NINTH ANNUAL CONVENTION

2:00 P. M.—Visit to Harvard University and to Agassiz Museum.

The inspection trip to Harvard University will include a visit to the Harvard Stadium, passing the University boat houses, Radcliffe College, the Washington Elm, and the site of the "Village Blacksmith."

An inspection tour of Harvard Yard and the following buildings will then be made under the auspices of guides: The Harry Elkins Widener Memorial Library, University Hall, The Fogg Art Museum, Memorial Hall, The Germanic Museum, The University Museum, including the famous Blaschka collection of glass flowers, and the Engineering School and Cruft Radio Laboratory.

2:00 P. M.—Inspection Trip to Machine-Controlled Exchange of New England Telephone and Telegraph Company—probably Columbia Exchange in Dorchester (under construction).

Boston, in common with other cities of the country, is engaged in a long-period program of gradually changing its telephone system over to machine-controlled exchanges. This trip offers an exceptional opportunity to those interested of viewing the installation of machine-controlled equipment before operation.

2:00 P. M.—Bridge Tournament for Ladies.

A Bridge tournament for ladies will be held in the ball room. Registration should be made at the Registration Desk, prior to one o'clock on Wednesday. Assignments to tables will be posted immediately afterwards. Several very attractive souvenirs have been selected for the prize winners. A "Nibble Tea" will be served in the ball room during the afternoon.

2:15 P. M.—Inspection Trip to Naumkeg Mills at Salem.

The Naumkeg Mills at Salem is one of the most up-to-date and modern cotton mills in this part of the country.

2:15 P. M.—Tennis Tournament—Preliminaries. (See Rules on Tennis page 17.)

2:30 P. M.—Meeting of Board of Directors.

5:30 P. M.—Illustrated Talk by Professor C. E. Magnusson.

Professor C. E. Magnusson, Dean of the College of Engineering of the University of Washington at Seattle, will give an illustrated talk on the mountains of the Northwest. This talk will be illustrated with color photographs taken by the artist Asahel Curtis. The photographs are said to be of an unusually high degree of excellence; those of western mountains and their scenery are of the finest ever produced, showing Washington mountains and falls.

EVENING

8:00 P. M.—New Ocean House Summer Orchestra.

Presenting a special program and musical entertainment.

8:00-8:45 P. M.—Reports of Technical Committee.

Brief review of progress during the year.

9:00 P. M.—Exhibit of Latest Development in Color and Stereoscopic Motion Pictures by W. Z. D. Kelley (in person) of Prizma, Inc.

Mr. Kelley will deliver a short lecture on how colored photography is attained, and will describe its latest developments and will demonstrate special phases of the new art.

10:00 P. M.—Special Illumination.

See more elaborate announcement in schedule for Tuesday evening.

10:00 P. M.—Dancing.

The motion-picture program at 9 P. M. will be followed by dancing in the ball room; music by the New Ocean House Special Wednesday Evening Orchestra.

10:00 P. M.—Demonstration of Public Address System With Telephone Lines. (See page 5.)

Thursday, June 28

MORNING

9:00 A. M.—Social Hour. Golf Demonstration by Francis Ouimet.

10:00 A. M.—Fourth Technical Session.

12. *Transmission Line Transients*, by V. Bush, Associate Professor Elec. Eng., M. I. T.

13. *Artificial Transmission Lines with Distributed Constants*, by F. S. Dellenbaugh, Asst. Professor Elec. Eng., M. I. T.

14. *General Consideration of the T and Pi Type Artificial Electric Lines in Connection with a Proposed Compensated Pi Line*, by H. Nukiyama and K. Okabe, both of Tohoku Imperial University, Japan.

15. *A miniature A-C. Transmission System for the Practical Solution of Network and Transmission System Problems*, by O. R. Schurig, General Electric Co.

16. *Simplified Method of Analyzing Short-Circuit Problems*, by R. E. Doherty, General Electric Co.

17. *Proximity Effect in Wires and Thin Tubes*, by H. B. Dwight, Canadian Westinghouse Co., Ltd.

18. *Floating Neutral*, by L. A. Doggett, Professor Elec. Eng., U. S. Naval Academy.

10:30 A. M.—All day drive to Lexington and Concord. Lunch at Country Club.

THIRTY-NINTH ANNUAL CONVENTION

EVENING

8:15 P. M.—Lecture on the "North Sea Mine Barrage" by Capt. R. R. Belknap, U. S. N.

An illustrated lecture on the "North Sea Mine Barrage" by Captain R. R. Belknap of the U. S. N., of unusual interest. Capt. Belknap shows the technical difficulties encountered in carrying out the stupendous task of laying the barrage which aided us so materially in winning the World War. Many thrills are assured to those who are unfamiliar with this phase of modern warfare.

9:30 P. M.—Dancing.

9:30-11:30 P. M.—Demonstration of Public Address System with Telephone Lines. (See page 5.)

Friday, June 29

MORNING

9:00 A. M.—Social Hour.

10:00 A. M.—Fifth Technical Session—(Parallel Session).

19. *Quality of Incandescent Lamps*, by J. W. Howell and Henry Schroeder, both of Lamp Works, General Electric Co.

20. *The Art of Sealing Base Metal Through Glass*, by W. G. Houskeeper, Western Electric Co.

21. *The Standardization of Electrical Measuring Instruments*, by H. B. Brooks, Bureau of Standards.

22. *Pellet Type of Oxide Film Lighting Arrester*, by N. A. Lougee, Stone & Webster.

23. *A Continuous-Current Generator for High Voltages*, by S. R. Bergman, General Electric Co.

This is to be one of the more prominent out-of-door entertainment features. The cars will pass through the edge of Boston, thence to Lexington and Concord, over the road traveled by Paul Revere. The whole section of Lexington and Concord is replete with revolutionary history. Guides will describe spots passed. Luncheon served without charge at country club en route.

11:00-1:00 P. M.—Putting Contest for Ladies—Qualifying Round.

Registrations should be made at the desk prior to 10 o'clock Thursday morning. Drawing for partners will follow at once. Contest will be held on the New Ocean House Putting Greens.

Ladies will play in pairs, each lady scoring for her partner. Low score for eighteen holes will count. Scores will be posted immediately following completion of the qualifying rounds.

Drawing for partners for finals for Friday play will be held at the Registration Booth on Friday at 9:30 A. M. Play will start at 11 A. M.

AFTERNOON

1:00 P. M.—Luncheon for Past Presidents.

1:00 P. M.—Golf Event No. 3—Mershon Cup Competition—Handicap Medal Play (18 Holes)—Open to Members Only.

Players will choose partners and will play in pairs to eliminate congestion. This competition will be played strictly in accordance with the United States Golf Association Rules, excepting such local rules as may be in force at the Tedesco Country Club. Penalty for out of bounds shall be loss of distance only. Stymies will not be played. (See rules on Golf, page 15.) Note: The Golf Committee reserves the right to postpone Event No. 3 until the following afternoon, if in its opinion Thursday's weather is unsuitable for the play.

1:30 P. M.—Inspection Trip to Watertown Arsenal.

The inspection trip to the Watertown Arsenal, at the present time the largest in the country, will include a visit to the laboratories with their special equipment for metallurgical analysis and X-ray work. There will be an opportunity of viewing the modern electric furnaces for the production of steel, and the construction of big guns and gun mountings.

This trip will be personally conducted by Brig.-Gen. Tracy C. Dickson and aides. There will be a special heat of steel run off in the electric furnaces while the visitors are present, and there will be a demonstration of laboratory apparatus for X-raying steel.

2:00 P. M.—Inspection Trip to both General Electric Company Works at Lynn. (See page 18.)

2:15 P. M.—Tennis Tournament—Semi-finals and Finals. (See Rules page 17.)

2:30 P. M.—Automobile Trip to Boston, with trip to top of Custom House Tower. (See page 19.)

5:00 P. M.—Afternoon Tea in Tea Room of New Ocean House.

5:30 P. M.—Musical by Professor Vladimir Karapetoff.



Bay and Shore Front at Swampscott

24. *Desirable Duplication and Safeguard in the Electrical Equipment of a Generating Station*, by W. F. Sims, Commonwealth Edison Co.

10:00 A. M.—Sixth Technical Session—(Parallel Session).

25. *The Axially-Controlled Magnetron*, by A. W. Hull, General Electric Co.

26. *Gaseous Ionization in Built-Up Insulation*, by J. B. Whitehead, Dean, School of Eng., Johns Hopkins University.

27. *Effect of Transient Voltages on Dielectrics*, by F. W. Peek, Jr., General Electric Co.

28. *Two Photographic Methods of Studying High-Voltage Discharges*, by K. B. McEachron, General Electric Co.

11:00 A. M.-1:00 P. M.—Putting Contest for Ladies—Finals.

AFTERNOON

1:00 P. M.—Inspection Trip to Arlington Mills at Lawrence.

The Arlington Mills is one of the largest cloth-producing plants in the world. Its principal products are worsted fabrics for ladies' and men's wear. The trip will afford an opportunity to see the various manufacturing processes such as sorting, carding, combing, spinning, weaving and dyeing and finishing. All of the machinery is electrically driven (group and individual drives).

1:00 P. M.—Golf Event No. 4—Best Selected Nine Holes out of Eighteen Holes Played—One-third Player's Handicap.

This event will be a medal play event—best selected nine out of one round of eighteen holes, and may be played as a separate round or combined with Event No. 3 in case of postponement. Total score of best nine holes will be added, and one-third player's handicap deducted. (See Rules on Golf, Page 15.)

2:00 P. M.—Inspection Trip to River Works of the General Electric Company, Lynn. (See page 18.)

2:00 P. M.—Inspection Trip to West Lynn Works of General Electric Company. (See page 18.)

2:00 P. M.—Visit to Harvard University and to Agassiz Museum. (See page 7.)

2:15 P. M.—Visit to Massachusetts Institute of Technology's Exhibit of Industrial Lighting, Rogers Building on Boylston Street.

The exhibit of industrial lighting situated in the Rogers Building of Massachusetts Institute of Technology on Boylston Street shows the various methods of industrial illumination from the time of the old carbon filament lamp, without reflectors, up to the most modern equipment of present lighting. This exhibit is presented through a lecture by Mr. Daniels, of the Boston Edison Company, and shows by actual demonstration the desirable features of proper illumination.

2:30 P. M.—Automobile Trip to Boston, with View from Top of Custom House Tower. (Elevator Service.) (See page 19.)

3:30 P. M.—Baseball Game.

Since no Annual Convention of the Institute is complete without a baseball game, it has been arranged to make this notable event one of the culminating features of the 1923 Convention at Swampscott. Those intending to participate should register at the Information Desk, and designate the position in which they excel. Members intending to participate are advised to bring fielder's gloves if possible. Prizes will be awarded to the players making the largest number of hits, the longest hit, the largest number of runs, and the largest number of errors, and to the batter striking out the largest number of times.

EVENING

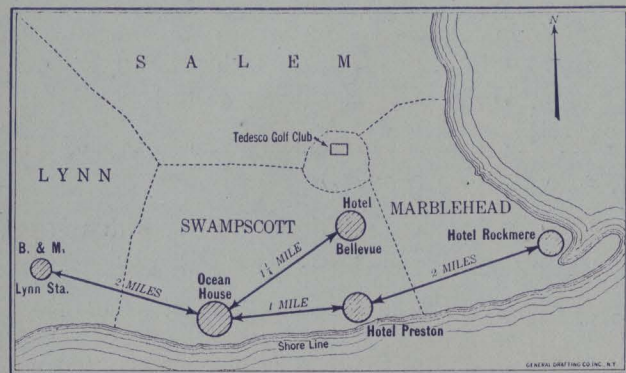
8:15 P. M.—Public Address System. (See page 5.)

9:00 P. M.—Dancing.

Saturday, June 30

Arrangements for special trips and inspections will be made upon request. (Top Custom House, Bunker Hill, Watertown Arsenal, Public Library, State House, Old State House, Educational Institutions, Automatic Telephone Exchange, L-Street Station, First National Bank, Charlestown Navy Yard, Power Stations, etc.)

Week end tours to Vermont, New Hampshire and Maine resorts will be arranged on request.



Free Bus Service Between New Ocean House and Other Hotels

Hotel Accommodations and Rates

New Ocean House, Swampscott, Mass.

The Headquarters Hotel for the 1923 A. I. E. E. Summer Convention. The rates, American plan, are:

Double room with twin beds and private bath. \$8.00 per day per person.—Double room with twin beds and running water. \$7.00 per day per person.—Extra large double room and bath with 3 single beds. \$7.00 per day per person.—Suite of two double rooms with bath between for four persons. \$7.50 per day per person.—Two extra sized double rooms, reception hall and private bath for party of five. \$7.00 per day per person.—Single room and bath. \$9.00 or \$10.00 per day.—Single room with running water. \$8.00 per day.

The New Ocean House will be the center of all the activities of the summer convention. Reservations should be made direct to the New Ocean House, Swampscott, Mass. Most of the rooms are double rooms with bath and it is suggested that, as far as possible, members should request reservations in parties of two, since some of the single reservations will have to be sent to the Hotel Preston. Some of the most desirable rooms situated on the ocean side are for three, four or five persons so that members who make up a congenial party and apply for such a suite, will be assured of desirable rooms. Members who plan to come alone and who signify on their request for reservations that they will share a double room with another member, will in general, get a more desirable room than if a single room were engaged.

To accommodate those attending the A. I. E. E. Convention, but who may not be registered guests, the New Ocean House management will serve during the five days of the Convention, in the Tea Room, a modified service lunch at \$1.00 and a modified service dinner at \$1.50. Lunch or dinner will be served in the main dining room at \$3.00 for either meal. Lunch and dinner in one day will be served at \$4.00 for the two meals. Breakfast, lunch and dinner on one day will be served at \$5.00 for the three meals. This service is for the regular elaborate hotel menu served in the main dining room and for which tickets will be obtained at the desk.

There is a garage in connection with the hotel. The storage charge is \$1.00 per day.

Other Hotels

Other available hotels in Swampscott and vicinity are Hotel Preston, Beach Bluff, Mass.; Bellevue Hotel, Beach Bluff, Mass.; Willey House, 80 Humphrey St., Swampscott, Mass.; Cliff House, 175 Humphrey St., Swampscott, Mass.



Annisquam Light, Gloucester, Mass. Typical North Shore Coastal View

This list represents considerable variation in location and price. Free bus service will connect these hotels with headquarters. For details see your preliminary notice.

Transportation

The following information has been drawn up as a guide to the membership in planning a trip to Swampscott. Regular one-way rates and round trip summer tourist rates will be in force at the time of the meeting. Members are advised to consult their local ticket agents at once relative to trains, fares and most desirable routes.

On arriving in Boston at South Station (via N. Y. N. H. & H. or B. & A. R.R.'s) proceed to Lynn from North Station (B. & M. R.R.). Transfer from South Station to North Station by Taxi (fare approximately 50c) or by Elevated trains, the Elevated stations are at the entrances of the two terminals. Running time, Boston to Lynn, about 30 minutes. The time (Daylight Saving) of departure of trains for Lynn from North Station (B. & M. R.R.) is as follows:—LEAVE BOSTON, A. M.—8:17, 9:01; 10:00; 10:45; 11:25. P. M.—12:00; 12:40; 1:40; 2:15; 3:15; 3:45; 4:27; 5:17; 5:22; 5:30; 5:53; 6:40; 7:20; 8:10; 9:10; 9:24; 10:25, 11:25; 11:30; 11:45.

Leave train at Lynn and go to Waiting Room on ground floor where buses to Ocean House will be found. Fare from Lynn to Ocean House 50c.

Tickets

Delegates arriving at Boston via N. Y., N. H. & H. or B. & A. R.R., should purchase tickets to Boston; those arriving at North Station via B. & M. may purchase through tickets to Lynn.

Baggage

Delegates arriving in Boston via N. Y., N. H. & H. R.R. check baggage to Boston and at Boston recheck to Lynn via Transfer Co. Those arriving in Boston via

B. & M. R.R. should check baggage direct to Lynn. Starter for Ocean House buses will arrange for transfer of baggage from Lynn Station to Ocean House upon receipt of notice from you.

Automobile Service

Extensive arrangements have been made by the Transportation Committee for auto service during the Convention. If, however, members with cars who can assist in this work will advise the Committee, it will be very greatly appreciated and be a great help to all.

General Information and Regulations Pertaining to Golf Events

Golf Event No. 3, on Thursday, is open to the Institute membership only. Golf Events Nos. 1, 2 and 4, on Tuesday, Wednesday and Friday, are open to the Institute membership and to guests and ladies.

All golf events are to start at 1:00 P. M. on the days scheduled so as not to interfere with the technical sessions and business of the Convention. It is desirable to have players start as early as possible, in order to cause the least interference with the playing by the regular members of the Tedesco Club.

Handicaps: Players can help greatly by registering with the Golf Committee home-club handicap before playing in any event. Mr. H. P. Hood, of the Tedesco Club, has kindly consented to act as Official Handicapper for the Golf Committee, and will arrange to receive players' registrations at their convenience. If a player has no home-club handicap, please consult Mr. Hood and agree upon a suitable allowance *before the play*. The Committee reserves the right to fix all handicaps and to withhold award of prizes pending proper adjustment. The Committee will appreciate individual co-operation by all players in this important matter.

Prizes: All prizes will consist of golf balls.

Event No. 1—Prizes will be given for the first and second best net scores.

Event No. 2—Prizes will be given to each of the two players turning in the best gross score, and prizes will be given to each of the two players turning in the two best net scores.

Event No. 3—The player turning in the best net score will be considered the winner of the Mershon Cup. In addition, prizes will be given to the best net score.

Event No. 4—Prizes will be given to the two best net scores.

In the event of a tie, the committee will toss a coin for the winner, and the losing player in the tie will take second prize.

No prizes will be awarded until after play is finished Friday afternoon. Only one prize will be awarded to

any one competitor in these tournaments. Should a player win more than one prize, the Committee will exercise its best judgment in distributing prizes to the best advantage.

Each player shall keep his own score. Cards must be duly attested by partner and must bear date and name of the event, with player's name legibly written. Cards shall be turned in immediately after completion of round for the competition for which entry was made. No prizes will be awarded until cards have been checked.

Important Notices.

If a match lose in distance one clear hole, it must allow the match following to pass it.

In case of a match which starts with a clear field ahead of it and plays so slowly as to hold up the match following it on two successive tees, it must allow the match following to go through.

Players looking for a lost ball must allow other matches following to go through them. When the following match has once started to go through, it must be allowed to pass and get out of danger before the match having lost a ball shall play.

Players who have holed out must get off the green at once when other players are following them.

Players must not carry or lay down clubs on the putting greens. All divots are to be replaced. Tedesco has rule of \$5.00 fines for not replacing turf and \$25.00 for damaging any putting green.

Players must smooth out the sand in the traps after playing out of them.

Rules Governing Play

All tournaments will be played under United States Golf Association Rules, excepting such local rules as may be in force at the Tedesco Country Club.

Since all tournaments have been arranged at medal play, stymies will not be allowed.—United States Golf Association Rule for stymie is "when both balls are on the putting green, if the competitor's ball strikes the ball of the player with whom he is playing, the competitor shall incur a penalty of one stroke, and the ball which was struck shall be at once replaced." Therefore, the Committee thinks it advisable for each competitor to lift his ball when on the putting green if his ball interferes with his opponent's line of put.

If a ball is lost, or out of bounds, or in an unplayable lie, the player shall return as nearly as possible to the spot from which the ball was played and drop another ball with a penalty of distance only. The penalty under the United States Golf Association ruling for a condition of this sort is one stroke and distance, but nearly every club has adopted a penalty of distance only, feeling that the ruling of the United States Association is too severe. Therefore, this Committee rules a penalty of distance only.

Particular attention is called to players putting without having the marker removed from the hole. In medal play the ruling is as follows:

"When the competitor's ball lying within twenty yards of the hole is played and strikes or is stopped by the flag stick or the person standing at the hole, the penalty shall be two strokes. Neglect on the part of the person standing at the hole does not exempt the competitor from incurring the penalty."

The Golf Committee suggests each player make certain that the flag stick is removed and avoid this severe penalty.

In General:

All events are to be played on the course of the Tedesco Country Club for which no ground fees will be charged players. In case members desire to play on other courses, the Committee will be pleased to make the necessary arrangements if due advance notice is given.

Caddy fees in all cases must be paid by players.

The A. I. E. E. is indebted to the Tedesco Country Club for the privilege of using this exceptionally fine course. Members playing at Tedesco should be particular in observing the etiquette and rules of the game.

General Information and Regulations Pertaining to the Tennis Tournament

The tennis tournament will be held on the Clay Courts of the New Ocean House, and the Tedesco Country Club on Tuesday, Wednesday and Thursday afternoons, commencing at 2:15 P. M. The new Mershon Tennis Trophy will be placed in competition. (Singles for members only.)

The United States Lawn Tennis Association tournament rules will govern the tournament. The matches will be played on schedule time in so far as possible in order to accommodate all of the entries.

The events will consist of Men's Singles and Men's Doubles, all matches being at scratch.

Matches will be the best two out of three sets, except the finals which will be the best three out of five sets.

Prizes for the Winners and the Runners-up will be offered.

Entries should reach Mr. A. J. Gowan, care of New Ocean House, Swampscott, Mass., prior to Tuesday, June 26, or should be registered at the Information Desk at the Hotel Lobby. The Singles' drawing will be held at the Information Desk immediately, and the entrants should be present at the drawing in order that they may become acquainted and arrange the Doubles' teams. The drawings for the Doubles will be held the following noon at the Information Desk.

The tournament will be of a quality to justify all tennis-playing members in bringing their complete tennis equipment to the Convention.

Inspection Trips

All inspection trips, visits, and tours will be made by automobile. Ladies will be supplied with coupon tickets

entitling them to automobile rides equivalent to three half-day trips. Charges to men will be:

Short trips (one way) 50c—round trip...	\$1.00
Half-day trips	2.00
Full-day trips	4.00

General Electric Factories

There are two separate factories of the General Electric Company in Lynn, one the West Lynn Works, and the other the River Works. These Works manufacture many types of electrical apparatus; principally steam turbines and turbo-generators from the smallest commercial size to units of thousands of horse power.

Also manufactured at these plants are centrifugal air compressors; a-c. and d-c. motors of various sizes and construction for all industrial purposes; motors for electric vehicle propulsion; switchboard and constant-current transformers; mercury-arc and tungar rectifiers; lamps of many types for factory, store, and street illumination; a-c. and d-c. meters and instruments of great variety in form and capacity; motion-picture regulators; and static condensers.

Automobile Trips to Salem and Marblehead

Salem and Marblehead, quaint old-fashioned New England towns, are literally overflowing with patriotic and historic interest. Their crooked streets and old Colonial mansions are reminders of the old French and Indian days when the town was a favorite visiting place of the Pilgrims.

Marblehead has a wonderfully safe harbor, and its yacht-racing course, known throughout the world, is over-



*Christ Church, Boston
The signal lanterns of Paul Revere displayed in the steeple
of this church April 18, 1775*

looked by the Boston, Eastern and Corinthian Yacht Clubs. It was here that Germany with her Sonder Boats, favorites of the Kaiser, met their first defeat at Yankee hands. From Marblehead came such famous Americans as Lieut. James Mugford, Elbridge Gerry, and General Glover, who took the Continental Army across the Delaware.

Salem, known as the City of Witches, was once the chief port of New England. It is now famous for its beautiful old Colonial mansions and its associations with Nathaniel Hawthorne, Timothy Pickering, Roger Williams and Judge Jonathan Corwin. At Salem the House of Seven Gables is interesting as one which Hawthorne much frequented, when it was the home of the Ingersoll family, his relatives.

Automobile Trip to Boston, with View from Top of Custom House Tower

Boston, in many respects the most interesting city on the American continent, is rich in historic association. Here were enacted many of the scenes that occupy high position in the nation's history.

This trip affords a complete inspection of historic Boston and Charlestown, and includes the following points of special interest: Charles River (showing Esplanade and Harvard Stadium), Commonwealth Armory, Harvard Medical School, Mrs. Jack Gardiner's Italian Palace, Museum of Fine Arts, Symphony Hall, Christian Science Church, Public Library, Emancipation Group (in Park Square), Burying Ground (on the Common), Boston Common (containing 48½ acres of land, laid out before 1640), Soldiers' Monument on Boston Common (to com-

memorate the service of the soldiers and sailors of Boston in the War of the Rebellion), Site of the Boston Massacre (on State Street), State House (which occupies the site of John Hancock's cow pasture), St. Paul's Episcopal Cathedral (built in 1820), Park Street Church, Old Granary Burying Ground (established in 1660; tombs of John Hancock, Robert Treat Paine, Samuel Adams and Paul Revere may be seen here), Tremont Temple, King's Chapel Burying Ground, Old State House (built in 1713; balcony from which the Declaration of Independence was first read outside of Philadelphia), Faneuil Hall (1763, Cradle of Liberty), State Street (the "Wall Street" of Boston), Site of Birthplace of Benjamin Franklin (19 Milk Street), Boston Post Office (built in 1871), Custom House Tower (the highest tower in New England), Quincy Market (oldest public market in America), Home of Paul Revere (built in 1677), Charter House, Old North Square, Christ Church (built 1723; the oldest church building in Boston; the tower contains a chime of eight bells; from this tower were hung the lanterns telling Paul Revere and the Patriots that the British troops were to march to Lexington and Concord), Old North Church, North Union Station (built 1894), Warren Bridge (from the Charles River), City Square in Charlestown (spot where Paul Revere started on his famous ride), Bunker Hill Monument (cornerstone laid by Gen. Lafayette, June 17, 1823), Breed's Hill (where the Battle of Bunker Hill was fought June 17, 1775, when 4,000 British attacked 3,000 Americans behind rude breastworks. The British loss, 1,500; American loss, 450), Charlestown Navy Yard (has a water front of 1½ miles; founded 1800), Chelsea Naval Hospital.



Marblehead Harbor, a Famous Yachting Center on the North Shore Not Far From Swampscott

Rules Governing Presentation and Discussion of Papers

At technical sessions papers may be read by title only, or by abstract, as determined by the Meetings and Papers Committee.

Papers not read by title will be read in abstract. The time for presentation must not exceed twenty minutes if there is only one paper to be presented at the session, or ten minutes if two or more papers are to be presented.

Members desiring to discuss a paper should notify the Meetings and Papers Committee, or the Chairman of the meeting, in advance of the meeting. Such members will

be allowed not to exceed ten minutes each for discussion before any other members are given an opportunity to discuss the paper.

Written discussion submitted in advance by an absent member may be read by some member who is present, and five minutes may be allowed for its presentation.

In the open discussion following the presentation of the discussion by letter and by members who have given advance notification, each member will be allowed five minutes unless additional time is available after all others who desire to speak have been heard.

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AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

Headquarters: 33 West 39th St., New York, N. Y.

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