

Notes on the History of The Institute of Radio Engineers

by

Robert Henry Marriott

This was written in long hand in unconnected parts while going through
massive records in 1937. The separate parts were then assembled and delivered
to the typist to be typed double spaced with as many carbons as practicable
to provide editorial space and readable copies for some who will, I hope, read
and correct or make suggestions.

It has been roughly estimated that a good printed history of radio up to 1937 would occupy three big books. The evolution of The Institute of Radio Engineers alone includes many details. From the details I can recall or have records of,

I pick out what I think may be wanted particularly along the lines of what people have asked me questions about at various times. Also I would like to indicate to some extent what radio and other conditions were like before, when and after The Institute of Radio Engineers adopted that name.

In describing radio organizations it has frequently been the practice to say or imply that radio practically began with the birth of the organization being described. One of the features of radio history has been organizations that have tried in that way to take credit for radio and then in the course of time radio has been forced to take discredit for those organizations. In trying to tell what led up to the Institute of Radio Engineers it is perhaps best to start by saying that radio, or wireless as it was called, led up to the formation of the Institute of Radio Engineers. At any rate that is the way I think of it. Probably I think of it that way because this is not my twenty-fifth but my fortieth anniversary.

Radio needed something like The Institute of Radio Engineers, so something like it grew in indefinite forms and then in definite forms before it was named: The Institute of Radio Engineers.

The wireless including radio that led up to The Institute of Radio Engineers covered considerable time and included many people, schemes, devices and places. All of that wireless cannot be told about in these notes. An indication of the extent of that wireless has been attempted by going through the old files and jotting down some of the names of people, places, stations, and devices and some brief subjects. Effort was made to include only names and subjects that were in wireless before 1912. Names of people who were not in radio but who brought about things that had notable effects on radio are also included.

The words were set down as they were encountered or thought of in going through the files, the result is a jumble but so was early radio.

Here are the words, names, etc:

Radio, Wireless. The American Science Association, The American Institute of Electrical Engineers, Clerk Maxwell, Christopher Columbus Wilson, The Navy, Seasonal variations, Rectifiers, The National Electric Signaling Company, The United Wireless, Day and Night Variations, Faraday, Dolbear, Safety of life at sea, Heinrich Hertz, Brady, Henry, Steinheil, Lindsay, pure science, "blue sky" stock sales, the ionized skies, The Society of Wireless Telegraph Engineers, The Wireless Specialty Apparatus Company, wine-women-song, financially poor engineers, operators, The American Wireless Telephone and Telegraph Company, desire for a job, Guglielmo Marconi, The Wireless Institute, Howard, Ohio State University, Penn State, Columbia, M.I.T., C.C.N.Y., Yale, glass bottomed watts, John Greenleaf Whittier, CQD, atmospherics, anti-static devices, sanddabs, science appeal, Theodore Roosevelt, Wilkins, O'Shaughnessy, Heyworth, Trowbridge, Fitzgerald, Edison, Gilliland, Phelps, Smith, Rathenan, Apple Creek, Marne, clerks, clarks, sparks, sharks, arcs, Cohen, Hogan, Popoff, Silver, Branley, Tisha, iron, steel, oxides, sulphides, chow mein, the ^{Occidental} ~~oxidantal~~, oriental, the Bowery, Fulton Market, Sweets Restaurant, Silicon, Seidels, Bull line, adventure, glamour, Fessenden, Pannil, Isabell, Pierce, Hill, Bull Hill, Midgley, Rick, Sawyer, Brown, Collins, Pullen, Rodebaugh, torpedoes steered by wireless, radiogoniometer, Braun, Zenneck, Binns, Betts, Sheffield, Bentley, Farnsworth, Simon, Pfund, lack of funds, fun, Telefunken, Von Nepel, Waldorf Astoria, Austin, Boston, Curtis, Williams, Grigg, J. H. Bunnell and Company, induction coil, decoder, microphone detection, comedy, tragedy, Jefferies, Fitzsimons, interrupters, press agents, muckrakers, muck, microphone detectors, guys, flattops, Ls Ts, complications, difficulties, Metropolitan Tower, Massie, Helix, anchor guys, Gage, Poulson, Brant Sock, Chicago

Worlds Fair, St. Louis Worlds Fair, Ashley, Tilkker detector, Hebert, Maxim, Hubley,
 Annapolis, height of ^Navesink, Galily, ^{lee}Avalon, Russian Hill, Todd, Hepburn, Hooper,
 Manning, Hudgins, Bullard, Hanscom, Austin, Cram, Sweet, Dodd, Squires, Russel,
 Fabries history of wireless telegraphy, Galbraith, Marshall, Dubilier, Sayville,
 quenched gap, ships average \$4.00 per month in message tolls, Krum, ^wWoolverton,
 Nally, Taylor, Gimman, Federal Departments, penitentiary, Gernsbach, Electro
 Importing Company, Modern Electrics, Joseph Henry, Kilbourn-Clar, The Merry
 Widow Waltz, via wireless play, Alexanderson, ^Collison, American Transformer
 Company, magnetic detector, telegraphone, Round, Sammis, deSouza, Bottomly, valve,
 ten-inch coil, jigger, Hughes, Popoff, ^{Bjerknes}Bjerknes, Righi, Jackson, Preece, shielding,
 tapper, Morse writer, Tesla, Scientific America, Murdock Aetheric Telegraphy,
 Nengschender wave detector, space telegraphy, sandwich stands, Shamrock-Columbia
 races, telegraphing without wires by Dam in McClures for March 1897, New, Broad-
 casting, radiophony, wavemeter, decrementer, physics, mathematics, geology, meteor-
 ology, antenna, coherer critical voltage, Bose, Hertz 50-megacycle demonstration,
 heterodyne, barreter, Lynden, Mulligan, cage antenna, wave chute, link circuit,
 Sir William Crooks, Muirhead, Weaver, Dame, Lang, International Telegraph Con-
 struction Company, Delaney lamp detector, Dean, Bell, patent suits, amateur sets,
 Torikata, Seibt, Kimura, Gleason, Milligan, Wildman, Thurston, Duffy, Hughes, Jackson,
 Fitzpatrick, Thompson, Davis, Stone Telegraph and Telephone Company, Russell, ^wNewton,
 Jackson, Baskerville, Stokes, Rice, Walton, Meneratti, Isaacs, Seelig, Van der Wonde,
 Hogg, umbrella, Trench, Perilson, Duddell, Bleakney, Bradfield, Norman, Con-
 solidated Wireless Telegraph and Telephone Company, ^{Groodt}DeGroot, Dillon, Amy, Armstrong,
 Eltz, Erskine Murray, King, Babylon, [!]Galilee, profane wireless, Curtis, Boaz,
 Burghard, Clapp-Eastham, Blitzen, Wallace, Beckerman, wireless schools, U.S. wireless
 laws, Gregg, Cleva, Ryan, Butcher, Somerville, Jones, Murphy, Ginsberg, Clifden,
 Burglund, arc broadcasting, Caruso broadcast, automatic wireless, wired wireless,
 Ansonia, The Aerogram, SS Republic disaster, Howe, syntonizer, Bower, Alexanderson,
 Martin, electrolytic interrupters, Vreeland, Consolidated Wireless Telegraph

Company, Redebangle, USS Prairie, Switzer, Kolster, Hudson, Barnhardt, Carrol, perhaps salary, Rochefort, Ducretet, Lodge-Muirhead, Slaby-Arco, Frank, Braun-Siemens, Telefunken, Swenson, U.S. radio stations increased from about 50 in 1903 to 700 in 1912. About 30 radio companies were started in the U.S. between 1899 and 1912. wave meters, decimeters, radio required by law in 1911, signal strength measuring devices, Kennelly, Espenschied, Fay, Hart, Parker, Brooklyn, bed spring antenna, towers, underground antenna, masts, Manhattan, et al. Al for others and for Al Goldsmith, alcohol, Almighty and allegations.

I have been asked how or when I became so interested in societies like I.R.S. What first caused me to become particularly interested in scientific societies took place in the summer of 1899. The American Association for the Advancement of Science held its meeting at Ohio State University with excursions from there to other places of interest. I was given a summer vacation job of handling their transportation and getting other students to help at different events.

From that series of summer meetings I got the idea that their Association was a very valuable educational society and of great benefit to its members. Not only because of the material in the papers they read, but for other reasons. As a rule science professors had a bad reputation with students. Particularly the professor I had the most work under. He was so precise. His chair was just the right height and his lecture table was cut away to fit his belly precisely. He lectured precisely in the best Ohio English and in a monotone. He bowed and smiled precisely and flunked students profusely.

On one excursion of the A.A.A.S. we went to Kellys Island in Lake Erie to examine the very large grooves in stone that a glacier made. As we arrived at the grooves a student who was with the party as a guide, gave me a sign to look around the corner of a barn. I looked and saw a building bearing a sign which read "native wines" five cents a goblet. I sneaked around the corner of the barn. The other students were ahead of me. At the door of the wine place I looked back

and received an agreeable shock, professor after professor was sneaking around the corner of the barn. Then somebody started to laugh and they made the wine drinking unanimous. The humanizing effect of the Association meetings on the scientists was I thought a very worthwhile feature. As part of my course, I had used their publications which was not so very different from using a textbook or an article in the London Electrician, but the meetings feature was something different, it was a get-together in the production of publications and a get-together in other respects.

By 1906, a wireless society was on my list of things I would like to see come about to help in developing wireless. But there were not enough people engaged in radio for a starter, in any one place in Wyoming, Colorado, Texas, Oregon, or Washington where I was building and maintaining stations. However, I was transferred to New York about the first of 1908 and began talking up the Institute idea.

Talking it up wasn't easy. As a rule, the officers of the wireless companies of that time thought their employees should not even know the employers of another wireless company and certainly they should not associate with them. Being secretive between companies and even between employees in the same company was generally considered to be the only right and sensible policy.

The company I was with was the United Wireless Telegraph Company. Christopher Columbus Wilson had become its president. I had known him in Denver and he had known for some time that I believed in experimental work, research, institutes and such things. He had come to think there was some good in the ideas I had. His favorable leanings finally caused some of the other officials to take a more favorable attitude toward my institute ideas. But about the time I thought I could start something somebody would object.

The United Wireless Telegraph Company was an operating company, the chief operating company under the U.S. flag. It was a manufacturing company too but it manufactured for itself. Keeping down the costs of the wireless sets was uppermost in the minds of the officers. Ship captains didn't want wireless. If their company officials could reach them by wireless the captains were not the absolute monarchs at sea that they had been. The S.S. companies thought maybe they wanted wireless if they could get it cheap enough. Passengers did not demand wireless nor did the public on shore. The law did not require wireless. Therefore the wireless company officials could not get much rent for sets and felt that they were forced to make and install the sets as cheaply as possible

and sell stock to make up the difference until there was a demand for wireless. We all thought a demand ought to come in time. People who wanted to develop improved radio apparatus by experiments, research, continual collection of data, discussions, institutes, etc. were thought to be bad. They wanted to change the apparatus and every change made the sets cost more. The effort of the officers of the wireless company was to keep the sets standardized for in that way they were cheapest. They regarded any society or institute that talked about improvements and changes as a menace. The world was not yet oriented to want wireless let alone improvements. Government wireless men wanted to buy improved wireless but they had to ask Congress for the money and Congress was not oriented to appropriate much money for wireless. It was a money losing business to try to build wireless for sale to the government, then.

Even opinions about the making of improvements were instable. Officials who were raising the money for the making and operating of wireless, sometimes put great hopes in what those who wanted to experiment, improve and develop might do. For example there was broadcasting at that time with the alcoholic arc transmitter. In the winter of 1907-08 the Merry Widow Waltz was played at the Liberty Theatre on West 42nd Street. Boys selling kazoos played it from Wall Street north, wherever there were possible customers. Dr. deForest played it on the ether from the Metropolitan Tower and I played it on the ether from Manhattan Beach (DF). One could not help but think there were possibilities there. Officials of wireless companies thought there were. The Cahill teleharmonic was then being exhibited for delivering dynamo-made music to homes over wire lines. If the wireless music officials could hear by listening in at the Waldorf could be made a little louder wouldn't it mean business, was in the minds of the United Wireless officials and others. The result was that officials oscillated for, and against those who wanted to experiment, make improvements, establish an institute and such. I could not make out whether or not I would get in trouble

with the officials of the United Wireless if I started an institute but I decided to try it regardless.

I was a member of the American Institute of Electrical Engineers. One of the first things I did outside of talking to United Wireless employees was to talk to Mr. Hutchinson and Mr. Pope of the A.I.E.E. Mr. Hutchinson immediately suggested that we get our wireless people to join the A.I.E.E. and read papers before that body. My answer was that I believed the wireless people needed more papers than the A.I.E.E. could afford to allow to be read. My idea was that the wireless people needed to have meetings once a month and of course wireless was too small a part of electrical engineering to be entitled to many A.I.E.E. meetings.

Then I sent out a form letter to a number of people who were not connected with the United Wireless, and some who worked for United Wireless but were located in other parts of the country. The letter read as follows:

New York, May 14, 1908

Dear Sir:

You have often thought no doubt that wireless telegraphy would be developed faster if those engaged in it would work together more.

The electrical engineers have come together in the United States by forming the American Institute of Electrical Engineers. This institution has helped to make better electrical engineering, better electrical engineers and better feeling between competitive firms.

Why should not we form the Institute of Wireless Engineers and pattern it after the American Institute of Electrical Engineers. The American Institute of Electrical Engineers plan as applied to wireless people would be briefly as follows:

First: Any person interested in wireless with proper recommendations, etc. would be eligible to associate membership.

Second: Any person having done valuable original work in wireless would be eligible to full membership.

Third: Any person whom the society by vote, should decide upon, would be eligible to honorary membership.

Fourth: Meetings should be held once a month, at which papers on wireless subjects would be read and criticized.

Fifth: Every member and Associate would receive a copy of the papers read, together with the criticisms, thus giving absent members the same information as those present.

Sixth: A library of wireless publications would be accumulated as rapidly as the funds of the Institute would permit. Each member or associate member would have access to this library.

Seventh: The officers and committees would be about as follows: President, Vice President, Manager, Treasurer and Secretary.

Committees: Executive Committee, Committee on Finances, Committee on Papers, Board of Examiners, Library Committee, Editing Committee and necessary special committees appointed from time to time.

Eighth: The dues would possibly be about \$10.00 per year.

I believe an organization formed on a plan similar to the above would materially improve wireless, increase the knowledge and ability of members, avoid friction between employees, between employees and employers and to some extent between wireless companies.

Would you join such an organization as outlined? If so please write me and give full expression of your views in regard to the matter in order that an organization may be formed on the right lines. Also such an organization might contemplate the establishment of a beneficiary association in connection with the Institute.

Yours very truly,

R. H. Marriott

Assistant Scientific Manager

42 Broadway
New York

The beneficiary organization, an employees insurance or old age pension idea was something that Vice President Bogart of the United Wireless Telegraph Company had in mind and thought it might fit in there.

A notice was posted on the bulletin boards of the United Wireless Telegraph Company which read as follows:

"Notice"

A meeting for the purpose of forming a Wireless Institute will be held in Room 1909, 42 Broadway (Mr. Marshall's office) Saturday, January 23rd, 1909, at 3:00 P.M.

All employees of the United Wireless Telegraph Company who are interested in the formation of such an Institute or Society, will please come.

R. H. Marriott

January 21, 1909

According to my recollection the Wireless Institute held about ten meetings per year. A letter written in December 1910 says "as a ryle there are not over nine meetings in a year." The plan as stated in Vol. 1, No. 1 was to hold meetings on the first Wednesday of each month except July and August, at 33 West 39th Street.

The following is the list of meetings of which I have found a record: January 23, 1909, 3:30 P.M. in Room 1909 at 42 Broadway, New York City, the first Wireless Institute meeting was held. A temporary organization was formed by Messrs. John S. Murphy, R.A. Somerville, Joseph D. Fountain, R. B. Respes, R. A. Cleva, John Gregg, E. Barnwell, Philip Farnsworth, Sidney L. Williams, and R. H. Marriott. The purpose of this organization was to draw up a constitution and make the necessary arrangements for the formation of a permanent organization.

Mr. Marriott was elected chairman. Mr. Sidney L. Williams was elected secretary. Various phases were discussed, motions passed and a Committee on Organization consisting of Respes, Somerville, Murphy and the chairman and secretary ex officio,

was appointed.

Wednesday, February 3, 1909, Room 1909, 42 Broadway, at 8:00 P.M. Second meeting of the Wireless Institute. Temporary organization preparing constitution and plans.

March 10, 1909, 8:00 P.M. at the United Engineers Building, 33 W. 39th Street, New York City. In the small room at the southeast corner of the building on the balcony floor. There were present Messrs. R. A. Somerville, Joseph D. Fountain, John C. Gregg, Roland B. Respes, A. R. Sharpless, E. M. Thurston, B. P. Martin, W. M. Jones, J. A. Bryan, Arthur C. Fike, Francis X. Butler, Wm. F. Bissing, Sidney L. Williams, and R. H. Marriott and others represented by proxy. A constitution was read, amended and adopted. Mr. Marriott was elected President, Mr. Harry Shoemaker, Vice President to serve one year and Mr. Pickard Vice President to serve two years. Directors: John B. Murphy and Richard A. Somerville. Sydney L. Williams, Secretary. Eugene M. Thurston, Treasurer. Entrance fees: \$5.00 for Members, \$2.00 for Associates. Dues: Members \$5.00, Associates \$3.00.

April 7, 1909, 33 W. 39th Street, New York City.

President Marriott called the meeting to order at 8:40 P.M. and presented a paper entitled "The Wireless Institute" which explained the reasons for this Institute, the constitution and the plans for the future. This was followed by reading a letter from Greenleaf W. Pickard discussing the paper, Mr. Ralph W. Pope, Secretary of the American Institute of Electrical Engineers then addressed the meeting, discussed the paper, gave the Wireless Institute the benefit of his experience and suggested that the Wireless Institute might arrange for a wireless session at the convention of the American Institute of Electrical Engineers in June 1910.

A printed record of the January 23, March 10, and April 7, meetings and the constitution as adopted are contained in Volume 1, Number 1, of the Wireless Institute Proceedings.

Printed applications for admission were also issued.

May 5, 1909, 8:45 P.M., 33 W. 39th St., New York City.

Greenleaf W. Pickard presented a paper entitled "Antennae." A lively discussion followed, lasting until 11:15 P.M. Thirty-two members and guests were present. Committees on Papers, Membership and Emblem were appointed.

This paper and account of the meeting is printed in Vol. 1, No. 2 of the Wireless Institute Proceedings.

Wednesday, June 2, 1909, 33 W. 39th St., New York City.

Meeting called to order at 8:45 P.M. A paper on "How Business Can Best Be Handled in Case of Distress" by Jack R. Binns was read and discussed at length. Committee on Standardization was appointed. This paper, etc. was published in Vol. 1, No. 3 of the Wireless Institute Proceedings.

Wednesday, September 1st, at 8 P.M., 33 W. 39th St., New York City.

"The Production of High Frequency Oscillations" by Mr. Harry Shoemaker.

Wednesday, October 6, 1909, at 8:45 P.M., 33 W. 39th St., New York City.

Mr. Frederick W. Midgley presented a paper entitled "Proportioning the Transmitter to the Aerial."

The Wireless Institute emblem was exhibited in the form of a pin. To seal for \$2.00 with owner's name engraved on the back. A gold disc with a Hertz oscillator in the center encircled by a Hertz receiving loop.

The paper and transactions of this meeting were published in Vol. 1, No. 5 of the Wireless Institute Proceedings.

This number of the Proceedings bears the Wireless Institute emblem.

Wednesday, November 3, 1909, 8:45 P.M. at 33 W. 39th St., New York City.

Mr. Alfred Norton Goldsmith, B.S. presented a paper entitled "Radio-Telephony" illustrated by lantern slides.

The papers to be presented in December, January, February and March were announced.

The November paper and transactions were published in Vol. 1, No. 6 of

the Proceedings of The Wireless Institute.

December 1909

"Conversion of Electric Oscillations Into Continuous Current by Means of a Vacuum Valve" by Wm. E. Smith.

January 5, 1910

"Measuring Instruments and Measurements in Wireless Telegraphy" by Louis R. Gleason. A half dozen copies were sent to members in advance and most of them were prepared for discussion.

February 1910

"Resistance in an Oscillating Current Circuit" by A. R. Sharpless.

March 2, 1910, 33 W. 39th St. at 8:30 P.M.

"Wireless Legislation, and the Stations of the Individual Operator" by Harold Zeamans.

April 6, 1910, Wednesday, 8:30 P.M. Wireless Institute meeting at the Lecture Room of the Department of Physics, College of the City of New York. A discussion on "Experimental Tests of the Radiation Law for Wireless Oscillators" opened by Professor M. I. Pupin of Columbia University. Published in Vol. 1, Part 1 of the Proceedings of The Institute of Radio Engineers.

May 4, 1910, Wednesday, 8:30 P.M., 33 W. 39th St., New York City.

A paper entitled "High Insulators". A comparison of high insulators as to electrical resistance, resistance of heat, chemicals, etc. by Stanley M. Hills. Published in Vol. 1, Part 1 of the Proceedings of the Institute of Radio Engineers.

June 1, 1910, Wednesday, 8:30 P.M., 33 W. 39th St., New York City.

"The Obtaining and Influence of a Good Ground in Wireless Telegraphy" by Frederick W. Midgley.

October 5, 1910, Wednesday, 8:30 P.M., 33 W. 39th St., New York City.

"Attunement of Wireless Telegraph Circuits for Highest Efficiency" by Elmer E. Butcher.

November 2, 1910, 33 W. 39th St., New York City.

A demonstration of Electrical Phenomena, by Goldsmith, Marriott and others.

Tickets were sold for admission to both this meeting and the meeting on December 7th.

December 7, 1910, Wednesday, 8:30 P.M., 33 W. 39th St., New York City.

"Side Lights on the Navy Department Wireless Telegraph Specifications" by J. Martin, Expert Electrical Aid, Brooklyn Navy Yard.

January 4, 1911, Wednesday, 8:30 P.M., Room 304, Fayerweather Hall, Columbia University, New York City.

"Singing Spark Sets" by Mr. Kolster of the Radio Telephone Company.

Election of Wireless Institute officers for 1911. The same officers had continued through 1909 and 1910. At this election Alfred N. Goldsmith was elected secretary and treasurer replacing Mr. Sydney L. Williams and Mr. Jean Thurston.

March 1, 1911, Wednesday, 8:15 P.M., Room 304, Fayerweather Hall, Columbia University.

"The Seibt Quenched Spark System as Used by the Radiotelephone Company" by Emil J. Simon.

April 5, 1911, Wednesday, 8:15 P.M., Fayerweather Hall, Columbia University.

"Recent Developments in Wireless Telegraphy" by Fritz Lowenstein.

May 3, 1911, Wednesday, 8:15 P.M., Fayerweather Hall, Columbia University.

"Resonance Transformers" by John Stone Stone.

November 1, 1911, Wednesday, 8:15 P.M., Room 304, Fayerweather Hall, Columbia University.

"The Application of Multiphase Currents to Wireless Telegraphy" by Mr. J.V.L. Hogan of the National Electrical Signaling Company.

(Lowenstein, Stone and Hogan were members of the Society of Wireless Telegraph Engineers).

December 7, 1911

"Amplifying Relays" by Mr. A. N. Goldsmith.

March 6, 1912, Wednesday, 8:15 P.M., Room 304, Fayerweather Hall, Columbia University.

"Recent Practical Developments in Wireless Telegraphy Due to Dr. George Seibt."

1. A direct reading wavemeter.
2. A new constructional form of receiving condenser.

To be read by E. J. Simon.

"Thousand Cycle Transmitting Sets in Theory and Practice" by Baron Shunkichi Kimura, Chief of the Japanese Wireless Bureau.

The former officers of the Wireless Institute were reelected at this or the following meeting. The same officers were elected for the Wireless Institute for 1909, 10, 11 and 12 except that Mr. Goldsmith replaced Messrs. Williams and Thurston for 1911 and 12.

The notice for this meeting included the following statement:

"----- we expect the publication of our Proceedings -----Once we resume publication, our large list of foreign applicants, numbering several hundreds can be admitted to membership ----- Your promptness in paying your enclosed bill for dues will determine how soon it will be before our printed Proceedings are again being regularly placed in your hands."

April 4 (or 3) 1912, Wednesday, 8:15 P.M., Fayerweather Hall, Columbia University.

"A New Constructional Form of Variable Condenser Due to Dr. G. Seibt" by E. J. Simon.

"Utilization of Both Waves Emitted from Closely Coupled Transmitters" by Mr. Torikata.

The notice said, the matter of the consolidation of The Wireless Institute and The Society of Wireless Telegraph Engineers would be considered.
May 6, 1912, Monday, 8:15 P.M. Room 304, Fayerweather Hall, Columbia University.

The notice for this meeting says:

"This meeting will be the last meeting of The Wireless Institute being a joint meeting of the Society of Wireless Telegraph Engineers and the Wireless Institute at which meeting both societies will combine to form the new society which will probably be known as The Institute of Radio Engineers. The articles of the

constitution of the new society and its officers will be decided upon at this meeting."

May 13, 1912. A meeting of the Institute of Radio Engineers was held at Room 304 Payerweather Hall, Columbia University, New York. The following officers were elected to serve during the balance of the year:

R. H. Marriott, President
 F. Lowenstein, Vice President
 Emil J. Simon, Secretary
 E. D. Forbes, Treasurer

The following members were elected to the Board of Direction for 1912: in addition to the Institute's officers.

G. W. Pickard
 F. Fay
 J. Hogan, Jr.
 L. Espenschied

The following committees were appointed by the President for 1912:

Standardization

J. S. Stone
 F. Lowenstein
 J. L. Hogan, Jr.
 G. W. Pickard
 A. N. Goldsmith
 R. A. Weagant

Papers

L. Cohen, Chairman
 A. N. Goldsmith

Publicity

J. L. Hogan, Jr.
 Emil J. Simon

The Wireless Institute Members, December 1, 1909.

Athearn, Harry E., New York, N.Y.

Installing Engineer, Wireless Telegraph Company.

Almour, George W., o/o Postmaster, New York.

Chief Electrician U.S.S. Connecticut.

Bissing, William F., New York, N.Y.

Attorney at Law

Bogart, Samuel S., New York, N.Y.

Vice President, United Wireless Telegraph Company.

Butler, Francis X., New York, N.Y.

Attorney at Law

*Butcher, Elmer E., New York, N.Y.

Installing Engineer, United Wireless Telegraph Company.

Bawn, H. R. Galilee, N.J.

Wireless Operator, United Wireless Telegraph Company.

Beardsley, Don G., Albany, N.Y.

Wireless Operator, Ten Eyck Park.

Buchernberger, Francis C., Brooklyn, N.Y.

Second Co. Signal Corps, N.G., N.Y.

*Browne, Walram S., Brooklyn, N.Y.

Amateur Wireless Operator

Bates, Louis W., Brooklyn, N.Y.

Wireless Operator

Barnwell, E., New York, N.Y.

United Wireless Operator, S.S. Antilles.

Bakersville, J. M., Chicago, Ill.

Chief Operator, Great Lakes Div., U.W.T. Co.

Brownlie, H. L., Tangier Island, Va.

United Wireless Operator.

Bryan, J. A., New York, N.Y.

United Wireless Operator, S.S. Saratoga.

Bowen, Paul, New York, N.Y.

United Wireless Operator, Manhattan Beach Station (DF).

Beckerman, Benjamin, New York, N.Y.

U.W.T. Operator, S.S. Hamilton.

Brodhead, E. F. New York, N.Y.

U.W.T. Operator, S.S. Merida.

Chapman, Corwin C., Southampton, England.

United Installer and Operation, Royal Mail SS Line.

Chase, Stacy Reeves, Jersey City, N.J.

Engineering Department, U.W.T. Company.

Cleva, R. A., New York, N.Y.

Construction Department, U.W.T. Co.

Cole, Arthur B., Montclair, N.J.

Wireless Department, Manhattan Electrical Supply Company.

Collins, Daniel, New York, N.Y.

U.W.T. Co. Operator, SS Cherokee.

Cornwell, J. H., Brooklyn, N.Y.

Wireless Telegraph Operator.

Duffy, J. B., New York, N.Y.

Chief Operator, Marine Dept., U.W.T. Co.

Davidson, James E., Montpelier, Vt.

President, Consolidated Lighting Co.

*Dolbear, Benjamin L., Tufts College, Mass.

Dibol, W. A., New York, N.Y.

Treasurer, U.W.T. Co.

Drace, I. H., Brooklyn, N.Y.

Wireless Telegraph Operator.

English, William P., Jr., Boston, Mass.

Manager, U.W.T. Co.

*Ehret, Cornelius D., Philadelphia, Pa.

Attorney at Law

*Espenschied, Lloyd, Brooklyn, N.Y.

Wireless Telegraph Operator.

Earle, C. L., New York, N.Y.

Wireless Telegraph Operator.

Farnsworth, Philip, New York, N.Y.

Attorney at Law.

Ferrick, W. J., New York, N.Y.

U.W.T. Operator, Manhattan Beach Station (DF).

Frasse, William H., Brooklyn, N.Y.

Pratt Institute.

Fountain, Joseph D., Cleveland, Ohio.

Construction Dept., Great Lakes Div., U.W.T. Co.

Fay, Frank H., New York, N.Y.

Assistant to Special Agent in Charge of Leased Wires, A.T. & T. Co.

Fike, Arthur C., Jersey City, N.J.

U.W.T. Co.

Fitzpatrick, W. S., New York, N.Y.

Finkelstein, I.C., New York, N.Y.

U.W.T. Co., Operator SS Morrow Castle.

Ford, R. G., New York, N.Y.

U.W.T. Co., Operator SS Alliancia.

Ferguson, F. H., Charleston, S. C.

U.W.T. Co., Operator, SN Station.

Galbraith, C.C., New York, N.Y.

General Manager, U.W.T. Co.

Ginsberg, Louis M., New York, N.Y.

U.W.T. Co., Operator SS Bermudian.

Gnau, G. F., Brooklyn, N.Y.

Gleason, Louis R., Elmhurst, L.I.

Late with R. A. Fessenden, Brant Rock, Mass.

*Goldsmith, Alfred N., New York, N.Y.

Instructor in Physics, College of the City of New York.

Gregg, John C., New York, N.Y.

Construction Dept., U.W.T. Co.

Gillen, W. H., New York, N.Y.

U.W.T. Co., Operator SS Prinz Joachim.

Horton, Harry M., Mansfield, Pa.

Wireless Telegraph Engineer.

Hughes, H. J., New York, N.Y.

Superintendent, Marine Service, U.W.T. Co.

Heintze, E. H., Alpena, Mich.

U.W.T. Operator.

Haslett, Crowell M., Jersey City, N.J.

International Telegraph Construction Co.

Haslett, Oscar S., Jersey City, N.J.

International Telegraph Construction Co.

*Hart, Frank A., Brooklyn, N.Y.

U.W.T. Operator, 42 Broadway Station (N.Y.).

Hance, S. W., Tampa, Fla.

U.W.T. Operator, PD Station.

Henderson, G. E., New York, N.Y.

U.W.T. Co. Operator SS Thames.

Hilken, H. H.,

U.W.T. Operator Cape Hatteras Station (HA).

Jackson, Arthur E., Cleveland, Ohio.

U.W.T. Operator.

Jones, Marvin, New York, N.Y.

Jones, Clifford M., New York, N.Y.

U.W.T. Operator, S.S. Caesar.

Kendrick, G.O.K., Buxton, N. C.

U.W.T. Operator, Cape Hatteras Station (HA).

Latta, Edward G., New York, N.Y.

Auditor, Marine Dept., U.W.T. Co.

Lemieux, Oscar, New York, N.Y.

U.W.T. Operator, Royal Mail Line.

Marriott, Robert H., Brooklyn, N.Y.

Engineering Dept., U.W.T. Co.

Murphy, John S., New York, N.Y.

Superintendent Construction, Atlantic Div., U.W.T. Co.

Midgley, Frederick W., Jersey City, N.J.

Engineering Dept., U.W.T. Co.

Maxson, C. P., New York, N.Y.

Capt. SS Comus, So. Pacific SS Co.

Miles, Cecil, New York, N.Y.

U.W.T. Co. Operator, SS Atrato.

Mowat, A., New York, N.Y.

U.W.T. Co. Operator, SS Colorado.

Mandle, Henry H., New York, N.Y.

Miller, Robert F., Atlantic City, N.J.

U.W.T. Operator.

Mason, F. Howard, New York, N.Y.

Morse, Arthur H., Seattle, Wash.

Construction Department, U.W.T. Co.

McCullough, H.F., Wilkinsburg, Pa.

Designer, Westinghouse Electric and Manufacturing Co.

Martin, Benjamin P., New York, N.Y.

U.W.T. Co. Operator, SS Iroquois.

Moe, Fred G., Duluth, Minn.

Manager, U.W.T. Co.

Murphy, Thomas, New York, N.Y.

Construction Dept., U.W.T. Co.

McGivern, Joseph P., New York, N.Y.

Wireless Telegraph Operator.

Nall, Ellison, Charleston, S.C.

Wireless Operator, U.S. Naval Station.

Nelson, N. Oliver, Seattle, Wash.

Factory Superintendent, U.W.T. Co.

*Pickard, Greenleaf W., Amesbury, Mass.

Consulting Electrical Expert.

Payne, M. H., Brooklyn, N.Y.

U.W.T. Co. Operator, 42 Broadway Station (NY).

Peck, Joseph A., E. Orange, N.J.

Engineering Department, U.W.T. Co.

Pickerill, E. N., New York, N.Y.

Manager Waldorf Astoria Hotel Station (WA) U.W.T. Co.

Parker, Joseph E., Brooklyn, N.Y.

Wireless Telegraph Operator.

Pike, Louis F., Seattle, Wash.

Construction Dept., U.W.T. Co.

Perry, W. W., Norfolk, Va.

U.W.T. Operator.

Pearse, William C., New York, N.Y.

Wireless Telegraph Operator.

Proctor, J. Albert, Revere, Mass.

Wireless Telegraph Operator.

Robinson, George A., New York, N.Y.

Construction Dept., U.W.T. Co.

Respass, Roland B., Chicago, Ill.

Respass and Co.

Reick, Louis F., Jersey City, N.J.

International Telegraph Construction Co.

Roberts, H. S., Albany, N.Y.

U.W.T. Co. Operator.

Rushworth, F. B., New York, N.Y.

U.W.T. Co. Operator, SS San Jacinto.

Robinson, Geo. N., New York, N.Y.

U.W.T. Operator, SS Florida.

Shoemaker, Harry, Jersey City, N.J.

Chief Engineer, U.W.T. Co.

*Sharpless, A. R., Jersey City, N.J.

Engineering Dept., U.W.T. Co.

Smith, William E., New York, N.Y.

N.Y.S. Naval Reserve, SS Granite State.

Sheedy, Joseph E., Seattle, Wash.

Lieutenant of Engineers, U.S. Revenue Cutter Service, USRC Thetis.

Strahl, William, Brooklyn, N.Y.

Second Co., Signal Corps, N.G. N.Y.

Sawyer, James M., Jersey City, N.J.

Factor Supt., International Telegraph Construction Co.

*Smith, J. O., New York, N.Y.

Hill Publishing Co.

Stevens, T. M., Boston, Mass.

U.W.T. Co. Operator.

Schmitt, F. J., New York, N.Y.
 U.W.T. Operator, SS San Juan.

Somerville, Richard A., New York, N.Y.
 Construction Engineer, U.W.T. Co.

Sheehan, Jas. J., New York, N.Y.
 Wireless Telegraph Operator.

Smith, Eugene B., San Juan, P. R.
 Wireless Operator U.S. Naval Station.

Thurston, Eugene M., New York, N.Y.
 Inspector, U.W.T. Co.

Tuck, William H., Brooklyn, N.Y.
 Expert in Factory Economics.

Townsend, L. T., New York, N.Y.
 U.W.T. Operator, SS Havana.

Toms, R. W., New York, N.Y.
 U.W.T. Operator, SS Ligonier.

Voeburgh, R. J., Buxton, N. C.
 U.W.T. Operator, Cape Hatteras Station (HA).

Wilson, C. C., New York, N.Y.
 President, United Wireless Telegraph Co.

Williams, Sidney L., New York City.
 U.W.T. Co.

White, D. B., New York, N.Y.
 Inspector, U.W.T. Co.

Wallace, L. C., New York, N.Y.
 Assistant Treasurer, U.W.T. Co.

*Wolf, Benjamin E., New York, N.Y.
 Chief Electrician, U.S. Navy Yard.

Walley, G. P., Elizabeth City, N.J.
 U.W.T. Operator, HD Station.

*Ware, Paul E., E. Orange, N.J.

Wireless Telegraph Operator.

Wheeler, Harry A., New York, N.Y.

Construction Dept., U.W.T. Co.

Watkins, Harold E., Jersey City, N.J.

The renewal of membership in 1910 did very well. A letter dated January 26, 1910 indicated that eighty-three had paid their dues for 1910 and that new applications for membership had been received from:

*Keyes, Edwin F., Washington State College, Pullman, Washington.

Rawles, P. C., 1174 W. 18th St., Des Moines, Ia.

The members above marked with an asterisk (*) were listed as members of The Institute of Radio Engineers in the 1932 Year Book. Others on the above list were members of the I.R.E. for different lengths of time.

Several who belonged to The Wireless Institute in 1909, 10, or 11, have asked me why it was that they were not rated as charter members of The Institute of Radio Engineers. The answer to that question is contained in the "Report of the Committee on Consolidation of The Wireless Institute" in resolution number 3 which says in part "---- all members of either society who shall have paid their dues for 1912 in either society shall be regarded as members -----". Unless they had paid their 1912 dues they were not listed as members of The Institute of Radio Engineers.

The Wireless Institute was unable to publish the papers it had in 1910. This was followed by the government prosecution of officers of the United Wireless Telegraph Company for misrepresentation in the sale of stock through the mails and later by the United Wireless Telegraph Company going into the hands of receivers. United Wireless Telegraph Company employees were reduced in pay, thrown out of wireless employment temporarily or permanently or were afraid they would be. All of which not only made it much harder to collect dues but much harder to even

ask for dues. And despite the efforts of both Espenschied and Goldsmith with the help of others, it was difficult to get a paper to be read at meetings.

That was another case of darkness before dawn. The new laws requiring radio were about to pep up radio and members of the Society of Wireless Telegraph Engineers had been moving from New England into New York.

Many Institute things were cooked up at "DF." Members were solicited there and from there by mail, phone and wireless telephone and telegraph. Manhattan Beach Station (DF) was located in the waterway that used to make Coney Island an island. A space west of Sheepshead Bay and continuing wider than the bay, used to be a tide flat and little channels. Mud, muskrats and Manhattan Beach station on stilts about 400 feet from the present end of Sheepshead Bay. It smelled like a tidal flat that is ^{too} close to civilization, smells like.

Before meetings, dinners, committee meetings and Board meetings were held at the Oriental in Chinatown and at Sweets next to Fulton market. You know what Chinatown smells like. If you don't know what Fulton Market smells like, go down and smell it. There was real atmosphere in the early development of the Institute.

It is hard for one who did not know earlier wireless days to get an idea of what they were like. For example Manhattan Beach Station (DF) was relatively profitable, important, and famous. United Wireless folks were proud of it and Marconi folks dammed it. The Wireless Age for December 1914 says: "The following verses (with apologies to Kipling) were composed in 1907 by the late Neil McIntyre, a former Marconi operator."

Old "DF"

by

Neil McIntyre

Way up mid the Labrador icebergs, workin a CRR boat,
 W'en you thinks you're free from jammin, doesn't it get your goat?
 You've given 'im "G" for twenty, wiv 'is signals weak as bref',
 We'en 'es just startin up wiv 'is third one
 You're jammed all to h--- by "DF".

For we all 'ears the bounder a sendin, but the bounder 'e don't 'ear us,
 So we just throws the fones on the table and gives vent to an impotent cuss,
 'Is signals get stronger 'an stronger, till they bloom in nigh render you deaf;
 You may go where you please from Cape Race to Belize,
 But you can't get away from "DF".

They talks about multiple tuners, and valve sets and such sort of guff,
 We consign the whole lot to the junk pile, we 'en "DF" is andlin the stuff.
 'Is percentage of dampin is awful, and the thing that puzzles me yet,
 'Is 'ow in the 'ell does 'e do it,
 Wiv a simple two kilowatt set?

For we all 'ears the bounder a sendin, but the bounder 'e don't 'ear us,
 So we lays the fones down on the table, 'an gives vent to an impotent cuss.
 'Is signals get stronger and stronger, till they bloom in night renders you deaf;
 An' you can't get away, from the call of "HA",
 Sent out by "FG" at "DF".

Of course 'e 'as got a big aerial, and an acre of ground plates we know,
 But only two kilowatts power, the you 'ear 'im wherever you go.
 From forty-two degrees right to Sea Gate, 'e follers you up like a ghost,
 You can't get away from 'is music,
 From Belle Isle to the Mexican coast.

For we all 'ears the bounder a sendin, but the bounder 'e don't 'ear us,
 So we just lays the fones on the table, and gives vent to an impotent cuss,
 From the cold Arctic Sea down to Cuba, 'is signals would render you deaf,
 You can go where you like, anywhere on the pike,
 But you can't get away from DF.

Sidney L. Williams did a great deal of work for The Wireless Institute particularly in 1909 and 1910 when he was secretary. He was a clerical employee of the United Wireless Telegraph Company. He did not expect to be a technical man but he believed in the principal^{be} of the thing and worked for the Institute for nothing, enthusiastically.

Three pals, Brooklyn amateurs, or perhaps it would be more correct to say of them that they were in the transitional stage from amateurs to professionals, were good workers. For example, Joseph E. Parker printed the meeting notices on post cards at very low cost, Lloyd Espenschied worked hard getting papers and Frank A. Hart was a booster for getting members.

Soon after the Wireless Institute was formed in 1909, Frank Hart was sent down to Manhattan Beach (DF) to operate that station. Part of that station building was used by me as a laboratory to test new wireless devices. At night part of the station was operated for clearing business and to collect data for me on the ranges of ships.

One afternoon Hart arrived at Manhattan Beach early and full of enthusiasm. He hurried in telling me that he had met a Professor Goldsmith at the College of the City of New York and had told him about Manhattan Beach and Professor Goldsmith wanted to visit Manhattan Beach and would I invite him. I would and did.

Professor Goldsmith showed up soon and told me he was a physics instructor at C.C.N.Y. and was specializing in color-photography^{and electricity} at Columbia for a doctor's degree. I was hepped up on the baby Institute and told him about it and invited him to attend the next meeting, which he did, and he attended every succeeding meeting, board meeting and committee meeting for many years.

The United Wireless Telegraph Company published a monthly magazine called the "Aerogram". It was sold chiefly on ships with the days news as received by wireless mimeographed and inserted in the printed magazine. A Mr. Pratt worked on this magazine and on other publicity for the company. As a newspaper reporter he had early in this century attended a dinner for a senator or ambassador who had lived in China. At that dinner "chicken chow mein" was introduced into this country. That dinner was served at the Oriental Cafe. If Pratt like you he took you to that cafe and introduced you to "chicken chow mein." He introduced me to it and I introduced members of the Wireless Institute to it and the Oriental as a place to eat before meetings. Goldsmith and I ate there before engaging in Institute work, as often as once a week.

In 1909 the Oriental Restaurant was one flight up on the southeast corner of Pell Street and the Bowery. Chow Mein (not so good) is very common now but then I only found one other place where I could get it.

Some Institute members did not relish Chinese dishes. Weagant for example wanted good American dishes so we went to Sweets. Fulton Market wholesalers wanted American dishes made from the best foods that wholesalers handled. They delivered the best to Sweets Restaurant at Number 2 and 4 Fulton Street. That restaurant served that food to the market people and to anybody else who would go to that out-of-the way place to eat. The food did seem to be as good as could be had and the prices were relatively low even when you added a couple of seidels of beer at ten cents a seidel and gave the big, elderly and dark gentleman who served you, a dime. That restaurant was established in 1845 and it looked it. It was old and very plain. We ate on the second floor just above the southwest corner of Fulton Street and South Street.

Sometimes only a committee or the Board and sometimes many members ate there before a meeting. Eating there before meetings continued for years.

I think there may be a photograph of one of The Institute of Radio Engineers' dinners held at Sweets. I gave the Institute a gavel at that dinner, made

from a belaying pin from the steam schooner "Roosevelt" that Peary used in his trip to the North Pole. The account I have says that dinner was called the Incorporation dinner and was held at Sweets at 7 P.M., June 25, 1913. Evidently when the Incorporation papers were made out, they were filed in Albany on August 23. As I recall there was quite a crowd at that dinner or some other and a photograph was taken, but I have not found such a photograph.

The part where we used to eat, the second floor portion of Sweets Hotel Restaurant is still there doing business with what look like some of the same colored men, same tables and about the same bill of fare. But without the downstairs restaurant and bar at number 4 and only serving beer and wine now. It looks a little older and claims are for wholesale where the bar was.

Some years ago I heard a director of the Institute of Radio Engineers tell about the history of the Institute of Radio Engineers. He said it had been formed by the combining of two amateur radio clubs. I do not know when he came into radio but I think it was after the sale of broadcast receivers became profitable probably more than ten years after the Institute of Radio Engineers was formed. If he had that idea probably others have it also.

The Institute of Radio Engineers was formed by the coming of The Society of Wireless Telegraph Engineers and The Wireless Institute. The SWTE (they called themselves Swatties) excluded amateurs as will be seen from Article II of their constitution.

At that time the commercial and government wireless people were, as a rule, against amateurs. They wanted to swat the amateurs like you would smash a buzzing mosquito. So far as I know the SWTE did not advocate swatting amateurs but that nickname fitted the professional spirit toward amateurs at that time.

The Wireless Institute was formed by Wireless Company Employees principally by United Wireless Telegraph Company employees, but the Wireless Institute did not exclude amateurs as will be seen by Article II of its constitution and some amateurs joined the Wireless Institute soon after its formation. However,

PART 4 (4)

as is indicated by the 1909 membership list, about 110 out of 123 members were employees of wireless companies or wireless branches of the government. Many amateur radio clubs existed in many towns and cities for periods ranging from a month to many years after about 1910. Some of the members of those radio clubs belonged to or attended the meetings of The Wireless Institute and The Institute of Radio Engineers.

Kicks aimed at amateurs occurred in the Wireless Institute meetings, Board meetings, committee meetings and correspondence. The following is a copy of a reply to such kicks found in a letter dated April 11, 1910.

"Apparently we can stop interference from amateurs better by taking them in than by keeping them out. We bring up the subject at nearly every meeting and show the amateur wherein he can be harmful and I believe we have helped stop interference some."

The Society of Wireless Telegraph Engineers limited its Associate membership exclusively to people associated with a wireless telegraph or telephone company.

The Society of Wireless Telegraph Engineers' constitution read as follows:

Article III

Membership

- Sec. 1. The members of this Society shall be designated as members and associates. Associates shall be equally entitled with the members to the rights and privileges of the Society, except eligibility to the offices of President and Vice President, but shall not have the privilege of voting except upon matters directly involving the finances of the Society. There shall also be honorary members who shall be entitled to all the rights and privileges of the Society, except the right to vote and to hold office.
- Sec. 2. A member shall be a member of the technical staff of any wireless telegraph or wireless telephone company, or a wireless telegraph engineer.
- Sec. 3. An associate member shall be associated with a wireless telegraph or

wireless telephone company.

Sec. 4. Honorary members may be chosen from among those who have rendered acknowledged eminent service to wireless telegraphy or its allied sciences."

As wireless knew no national boundaries and might be developed by anybody who took an interest, the Wireless Institute constitution was intended to admit anybody anywhere as an associate, after the applicant had been OK'd by at least three members. The founders hoped to have Wireless Institute sections in many places.

The Wireless Institute constitution read as follows:

ARTICLE II

Membership

"Sec. 1. The membership shall consist of:

- (a) Members, who shall be entitled to all of the privileges of the Institute.
- (b) Associates, who shall be entitled to all of the privileges of the Institute except the right to hold the office of President or Vice President.
- (c) Honorary Members, who shall be entitled to all of the privileges of the Institute except the right to vote or hold office, except when elected from the members, or associates, they shall retain their rights as members or associates.

Sec. 2. A member shall be a person of high professional standing who has engaged in the development of the wireless art for at least three years, and who is not less than twenty-five years of age.

Sec. 3. An Associate shall be a person who is interested in the advancement of the wireless art.

Sec. 4. An Honorary Member shall be a person of acknowledged eminence in the wireless art."

Nor did the constitution adopted by the Institute of Radio Engineers

exclude amateurs. The only change it made from The Wireless Institute, for Associates under Article II was to substitute "radio-transmission" for "the wireless art."

Report of the Committee on Consolidation of The Wireless Institute.

The above committee met at 4 P.M. on Saturday, March 9, 1912 to consider the proposal laid before The Wireless Institute by The Society of Wireless Telegraph Engineers. It was unanimously decided that the following proposals be laid before the members of The Wireless Institute and, on their approval of the same, be handed to The Society of Wireless Telegraph Engineers.

In consideration of the desirability of concentrating the efforts of those interested in the scientific and commercial development of radio communication, the attainment of which end will undoubtedly be furthered by the consolidation of The Wireless Institute and The Society of Wireless Telegraph Engineers, and in reply to the proposal submitted by the Society of Wireless Telegraph Engineers: Be it resolved,

1. That the Wireless Institute and The Society of Wireless Telegraph Engineers shall be combined, thus forming a new society, which shall be incorporated as The Institute of Wireless Engineers.
2. For purposes of consolidation, at a properly announced meeting (joint meeting) of the societies first named, a new body of officers and Board of Direction for the year 1912 shall be elected by all members and all associates of each society voting.
3. The funds of each of the component societies shall become the absolute property of The Institute of Wireless Engineers, and all members of either component society who shall have paid their dues for 1912 in either society shall be regarded as members (or associates respectively) in The Institute of Wireless Engineers without further initiation fees or further dues for 1912.
4. The status of all members of either society in The Institute of Wireless Engineers (that is as members or associates) shall be determined by the impartial vote of the newly elected Board of Direction.

5. At no time shall any discrimination against or in favor of any member of either society be exercised on the basis of his previous membership in either society, the explicit understanding in the consolidation of the component societies being that both societies completely lose their individual identity and are not to be regarded as factions or parties in the management of The Institute of Wireless Engineers.
6. The officers in The Institute of Wireless Engineers shall be a President, Vice President, Secretary, Treasurer, and Editor of Publications. It shall be the duty of the last named to superintend the printing, choice of typography, and arrangement of parts of each publication, said publications having been previously selected for publication by the Committee on Publication and Papers hereinafter mentioned.
7. The governing body of The Institute of Wireless Engineers shall be the above mentioned officials and four (4) members, who together shall constitute the Board of Direction. Five (5) members of this Board shall be a quorum.
8. Members in The Institute of Wireless Engineers shall be nominated by at least five members and shall meet with the approval of the Board of Direction. Their names shall then be submitted for approval to the Institute. More than one-fifth the votes of those present (but not less than three votes) adversely cast shall suffice for rejection of the candidate. Members shall be drawn from the following classes:
- (1) Wireless engineers of recognized standing who shall have been engaged in commercial work for five years.
 - (2) Professional scientists of recognized standing who shall have shown a mastery of the field of radio communication through their publications or otherwise.
9. Associate members in The Institute of Wireless Engineers shall be nominated by at least three members, meet with the approval of the Board of Direction, and be elected by a four-fifths vote of the Institute, all members and Associates present voting. Their qualifications shall be the following:

- (1) Wireless engineers in commercial employment.
- (2) Scientists or laymen who shall show to the satisfaction of the Board of Direction a greater knowledge of the theory and practice of radio communication than is necessary for the design, adjustment, and operation of noncommercial installations. A commercial installation shall be regarded herein as characterized by high efficiency, reliability in operation and scientific correctness, though not necessarily by lowest possible cost. All associates must be over eighteen years of age.

10. Members or Associates, if found delinquent in their duties or disobedient to the constitution of The Institute of Wireless Engineers may be tried by the Board of Direction and upon decision of the Board of Direction their names shall be submitted to the Institute to determine their suspension, expulsion, or restoration to membership. A three-quarters vote of the Institute shall be necessary to ratify such action of the Board of Direction.

11. The Proceedings in print of the Institute shall cost 50¢ per copy to nonmembers, but shall be furnished gratis to all members. Colleges, universities, and public libraries shall have membership privileges in this particular.

12. The annual dues shall be \$3.00 for both Members and Associates unless decided otherwise at the constitution meeting described below.

13. There shall be the following standing committees:

- (1) Committee on Papers and Publications composed of the President, Vice President, Secretary and Editor of Publications. This committee shall decide what papers are to be published, what papers are to be read to the Institute, and the priority of publication of papers. The Editor of Publications shall have two votes in this committee.
- (2) Committee on Standardization and Publicity. This shall be composed of the Board of Direction and six (6) members or associates. It shall

be the duty of this committee to lead in any movements toward the standardization of wireless apparatus or its rating, to inform the public correctly where necessary concerning wireless matters such as patent legislation, wireless legislation, questionable enterprises, and such other matters as shall be regarded the duty of the Society to publish for the benefit of the public and the wireless industry.

14. In the absence of an emblem adopted by the Society of Wireless Engineers, the emblem of The Wireless Institute though of course with name of the society shall be adopted as the emblem of The Institute of Wireless Engineers unless adversely decided by the constitutional meeting of the Institute below described.

15. One of the three first meetings of The Institute of Wireless Engineers shall be taken up by the adoption of a new constitution, which constitution, however, shall contain the material of Articles I through XIV above except articles XII and XIV. All members and associates shall vote on the provisions of the constitution, a majority of the members and associates constituting a decisive vote.

Alfred N. Goldsmith

Secretary of the Committee on Consolidation.

Mr. John Stone Stone gave a history of The Society of Wireless Telegraph Engineers when he received the 1923 Institute Medal, as follows:

"The Society of Wireless Telegraph Engineers had its origin in Boston and Cambridge, Massachusetts among a small group of men who constituted the technical staff of the Stone Telegraph and Telephone Company.

"In 1907 it occurred to me that it would be a distinct advantage to each of us if we crystallized our ideas about our work into scientific papers, and that it would be of great value to all of us to hear and discuss such papers. I therefore organized a Society of Wireless Telegraph Engineers within the staff of the Stone Telegraph and Telephone Company. We held regular meetings, usually at my house in Bay State Road, Boston. Many excellent papers were read and

discussed, and after the adjournment of the formal meetings we had a light supper.

"The value of this society to its members became so apparent that in 1908 it was decided to incorporate the society and to extend the privilege of membership to radio engineers generally."

The constitution of the Society of Wireless Telegraph Engineers was published in 1908 and listed the following officers:

John Stone Stone, President
 E. R. Cram, Vice President
 C. E. Russell, Secretary
 Dr. R. T. Wells, Treasurer

Managers

F. A. Kolster
 A. P. Browne
 C. C. Kolster

Geo. K. Woodworth, Ernest C. Robes, and Oscar C. Roos were also members at that time.

The Institute of Radio Engineers January 1, 1913 publication of the constitution, officers, committees and list of members, gives the names of the charter members of the Institute of Radio Engineers as follows:

(a) From the Society of Wireless Telegraph Engineers.

J. C. Armour	F. H. Knowlton
S. Cabot	W. S. Kroeger
W. E. Chadbourne	F. Lowenstein
E. R. Cram	Walter W. Massie
G. S. Davis	H. B. Moore
Lee deForest	G. W. Pickard
E. D. Forbes	Samuel Reber
V. F. Greaves	O. C. Roos
G. Hill	J. S. Stone
J. L. Hogan, Jr.	E. W. Sundberg
W. S. Hogg	A. F. Van Dyck

(b) From the Wireless Institute:

Wm. F. Bissing	Frank Hinners
P. B. Collison	James M. Hoffman
Jam Dages	Robert H. Marriott
Lloyd Espenschied	A. F. Parkhurst
Philip Farnsworth	G. W. Pickard
Frank Fay	H. S. Price
Edw. Gage	A. Rau
Alfred N. Goldsmith	Emil J. Simon
Francis Hart	C. H. Sphar
Robert L. Hatfield	Floyd Vanderpoel
Arthur A. Hebert	R. A. Weagant

I have always felt that John V.L. Hogan, Jr. deserved the most credit for bringing the Society of Wireless Telegraph Engineers and The Wireless Institute together under one name. As I recall, he was the first to suggest it to Goldsmith and me. May be he suggested it to Goldsmith first. When we took to the suggestion he worked continually with us to bring the combination about and continued to work with us after The Institute of Radio Engineers was formed.

The application for incorporation of The Institute of Radio Engineers under the laws of the State of New York was signed by R. H. Marriott, Lloyd Espenschied, A. N. Goldsmith, John Stone Stone, E. J. Simon, R. A. Weagant, G. W. Pickard, J. H. Hammond, Jr. and J.V.L. Hogan, Jr. The papers were filed in Albany on August 23, 1913.

This isn't quite accurate. Hogan & I worked out the idea jointly

the finest sort of cooperation from Marriott. I had to use a lot of tact to persuade the two

C. M. Haslett was the committee who arranged for the making and selling of Wireless Institute pins and P. B. Collision for the Institute of Radio Engineers pins. Shoemaker and I worked out the design for the Wireless Institute emblem and pin. Goldsmith, Hogan and I did the same for the I.R.E. emblem and pin. I recently found an envelope containing a number of pin models I made out of thin foil. It was Goldsmith or Hogan who suggested that the I.R.E. pin represent the wave rather than the sending and receiving apparatus of Hertz that were represented on The Wireless Institute pin.

I did this - was intended to symbolize the relation of electric & magnetic forces.

After the Institute of Radio Engineers had been formed and the charter member list had been made up, several who had taken an interest in The Wireless Institute and had attended meetings, but who had not paid their 1912 dues, paid dues and became members of The Institute of Radio Engineers.

The printed applications for admission to The Wireless Institute and to The Institute of Radio Engineers looked much alike except that the color of the paper changed from "pink lemonade" to "cafe au lait."

Speakers to pink their individual pinners enough to consolidate as a matter of fact, needles were very plentiful before the consolidation

air

The same individual was president of The Wireless Institute and Institute of Radio Engineers in 1912, vice president (who in the frequent absence of the president did much of the presiding) in 1913, and sort of a spare chairman who presided when succeeding presidents were absent.

The meetings continued at Columbia, usually on the first Wednesday of every month but July and August.

May 20, 1912, 8:15 P.M., Room 304, Fayerweather Hall, Columbia University.

Mr. Marriott spoke on the need of standard terms, units and symbols.

F.
Messrs./Lowenstein, Geo. Clark, R. Weagant, Sphar, Fay, Goldsmith, Marriott and Kolster spoke relative to provisions for the safety of life at sea, power, wavelengths, decrement and the coming International Radio Convention at which Mr. Kolster of the Department of Commerce and Labor was to be an advisory delegate.

Resolutions were passed regarding the death of Mr. John Phillips the chief operator of the steamer "Titanic."

June 3, 1912

Mr. Lesh talked on "Radio-Signalling in Aviation."

September 4, 1912

Mr. Marriott exhibited and described a small, light, portable wave-meter he had designed, and discussed the 300 and 600 meter wavelengths limitations.

Dr. Goldsmith read a paper by W. Torikata and E. Yokoyama on "Utilization of Both Waves Emitted from Closely Coupled Transmitters in Radio Telegraphy."

In a note added to the meeting announcement Goldsmith said to me: "there will be present at Fayerweather Hall the very cream of the wireless profession, as usual."

October 2, 1912, Room 301, Fayerweather Hall, Columbia University.

Dr. Alfred N. Goldsmith presented a paper on "Present Educational Necessities in Radio Communication." He spoke of the past year course that had been previously established at Ohio State University in radio and of the course that he had recently established at the College of the City of New York.

November 6, 1912, Room 301, Fayerweather Hall, Columbia University, Wednesday,
8:30 P.M. Sharp.

Dr. Lee deForest lectured on the work of the Federal Telegraph Company, using undamped oscillations.

This paper was published in No. 1, Vol. 1 of the Proceedings of the I.R.E.

December 4, 1912

Mr. Simon talked on Dr. G. Seibt's new direct-reading wavemeter.

Beginning with 1913 records of meetings were recorded in connection with such papers as were printed in the Proceedings.

As I recall, The Wireless Institute had made little effort to get publicity. When The Institute of Radio Engineers was formed, somebody argued strongly for publicity as a means for increasing our membership. From then on we received more publicity. For example in the Telegraph and Telephone Age for June 1, 1912, October 16, 1912, November 16, 1912, February 16, 1913 and April 16, 1913; Electrical World for May 25, 1912, September 14, 1912, December 14, 1912, April 12, 1913; and in the London Electrician for June 2, 1912, November 22, 1912, December 20, 1912, February 21, 1913, and March 28, 1913.

The Institute of Radio Engineers is now in the McGraw Hill Building. A closer connection between McGraw-Hill and the Wireless Institute was considered in 1910. Mr. Bissing of the Wireless Institute discussed several plans with Mr. Weaver, Editor of the Electrical World whereb the Electrical World would for example print our papers in part in that McGraw-Hill Magazine and in full in pamphlets, as the main part of our Proceedings.

A. B. Cole was in charge of the radio portion of the long counter in the Manhattan Electric Supply store that ran through the block west of Broadway in Park Row. Cole was a Wireless Institute - Institute of Radio Engineers booster to his customers. His father was mathematics professor at Columbia and I believe it was through Cole that we went to Columbia to hold our meetings. Later Louis Pacent became Cole's assistant and still later his successor. He too was a booster.

Lantern slides were not used in connection with the presentation of many of the early papers. The slides, the lantern and the operator cost money. In a few cases drawings were made on sheets of paper about two by three feet fastened to a stick at the top and thrown over the back and were removed after use. However, in most cases blackboards were used.

Before a meeting the author would sometimes miss the dinner at Sweets and go to Columbia early enough to draw all his figures on the blackboard before the audience arrived. Sometimes the author and helpers would each take a sketch of figures and copy them on different parts of the board, at about the time the meeting was scheduled to begin.

Blackboard figures had advantages and drawbacks. Having all of the figures in view before, after and during the reading of the paper was an advantage. When the figures remained during discussion they helped, but a discussor was apt to erase some to make room for his own illustrations.

A very long black board at Columbia was a communication medium for those who preferred to say what they had to say in numerals, Greek letters, sines, cos and such. John Stone Stone and J. Zenneck said their say in Mathematics to some extent. Mr. Louis Cohen said it with mathematics almost entirely. Any of them could express himself eloquently in a dash of mathematics ten to forty feet long. The mathematicians coughed their ways happily through the chalk dust fog. The non-mathematical units in the audience dropped their anchors and remained motionless while waiting for the mathematical fog to clear up. Most of the faces in the audience carried an understanding expression.

The Wireless Institute and The Institute of Radio Engineers did not pay anything for work except for example when they paid a printer or the janitor at Columbia. As I recall, a couple of dollars to the janitor paid for the room at Columbia.

All meetings, Board meetings and committee meetings were held outside of working hours. At night, in the evening, on holidays, or Saturday afternoons.

The active workers were so few that some were on all of the committees and the Board. Meetings were frequent, for example Board minutes show that the Board met at the Custom House on December 18 and 20, 1912. At the meeting on the 20th, Espenschied, Goldsmith, Hogan, Marriott and Simon were present in person and Forbes by proxy. Being radio inspector, I donated the Custom House. Other notes show one Institute meeting on April 1 and Board meetings on April 8, 15, 22 and 29, 1914.

To get enough money to pay for Proceedings continued to be difficult. Although some money was left over from 1911 and more was collected in 1912, Volume 1 of the Institute of Radio Engineers was not published until 1913 and little more than enough dues were collected by March 1914 to pay for the last number in the 1913 Proceedings.

About the time the Institute was started "wireless" had become the subject of many financially and scientifically speculative and questionable articles. One of the reasons I wanted an Institute, dated back to when I was taking up the study of wireless and wireless history, from 1897 to 1901 at Ohio State University. Then and for years later the lack of accuracy in what was published about radio was another weak link in radio development. My professor at college had the most confidence in the London Electrician. As a result, I read all wireless articles in the London Electrician quite faithfully up through 1905. The increase of wireless articles in popular magazines further emphasized the need for something that would publish wireless articles and be careful to see that they were accurate.

Presumably new things usually start amid untrue claims made by those who want to see the new idea. Radio started with a double dose of false allegations, both pro and con.

When claims were made that wireless messages were sent much farther than beyond the horizon, college professors and others who had read Maxwell, said that could not be true. From what Maxwell wrote, wireless waves were believed to travel like light and light would not follow the curvature of the earth beyond the horizon

except when it was reflected or refracted by something and supposedly there was not anything in the atmosphere or heavens to reflect or refract wireless waves. Also with a coherer receiver static produced much the same dots and even the dashes that a wireless transmitter sent. So Maxwell and static caused excessive allegations to the effect that radio people were lying even when they were not. A sufficiently reliable society and publication could overcome that in time.

I was skeptical about wireless going around the world, to a sufficient extent in 1901, so that in playing safe in every way I could in picking a location for a practical wireless circuit I picked the Avalon, Santa Catalina Island to the mainland location and put the stations high enough so you could see one from the other with a good telescope on a clear day.

About July 1, 1911 the enforcement of U.S. law requiring radio on certain passenger vessels began. This law, the act of June 24, 1910, was extended on July 23, 1912 to include cargo vessels, auxiliary power, communication between the radio room and the bridge, and two or more skilled radio operators in charge of the apparatus on certain passenger-carrying vessels. On August 13, 1912 an act was approved by the United States Government to regulate radio communication including the licensing of radio operators and transmitting stations. Demand for radio had arrived. A definite legal prescription requiring sea captains to take two radios and two operators. That depressed the captains, caused passengers to live longer and stimulated the radio business. The number of U.S. commercial ships equipped increased over one hundred and twenty-five per cent between 1912 and 1914. Employees increased, the operators increased about three hundred per cent. More people and more dollars in radio were available to help make an Institute. Radio had saved passengers of, or had aided, nearly fifty vessels before the Titanic sunk in 1912.

The Marconi Wireless Telegraph Company of America employees and other Marconi employees had held aloof from the Wireless Institute and from the Society of Wireless Telegraph Engineers, except Jack R. Binns.

Jack had become a hero by saving lives, probably 1500, via wireless in the Republic disaster. Frederick Thompson who ran the shows at the 1904 St. Louis Worlds Fair, who built the Hippodrome and Luna Park, had put on a show at the Liberty Theatre on W. 42nd St. called "Via Wireless." I put a regular United Wireless outfit in his stage cabin. That cabin rolled and pitched in the storm while the full powered transmitter and wide open spark made a noise like a machine gun and saved lives and also married a couple. When Binns actually did what the show had been playing, Thompson wanted Binns to appear with his show. The Marconi Company would not let Binns do that unless Thompson used Marconi apparatus in place of United Wireless. Binns and I became friends through our contacts while the United Wireless equipment was being thrown out and Marconi equipment was being moved in.

In 1911 I went with the Marconi Wireless Telegraph Company. Then other Marconi employees joined me in The Wireless Institute including, R. A. Weagant, and A. Rau.

Of course in developing the Institute there was inertia and opposition. Inertia all the time and opposition particularly the first time we did something. Putting the word radio in the Institute name and trying to get people to use it produced some antagonism against the Institute because at that time English speaking people were ^{partisan} ~~partisan~~ to "wireless." Trying to name anything or define anything stirred up hornets. The Wireless Institute had a Standards Committee. It did not produce. The Institute of Radio Engineers Committee duplicated that nonproduction^{ve}ness in 1912. I appointed those committees and was ~~diss~~appointed at not getting any standards. I thought we should get busy and put out some standards.

In 1913 I asked President Pickard to appoint me chairman of the Standards Committee. Then I found that influential people wanted to make the radio standards but they did not want to make them until sometime, maybe within a few years.

However, our Committee on Standardization went ahead. Our meetings were usually

held in the U.S. Radio Inspector's office at the Custom House. We met over fifty times between January and September 1913. Dr. Goldsmith and I attended all the meetings. Mr. Hogan nearly all. Mr. Weagant who lived in Aldene, N.J. attended most of the meetings. Mr. Pickard who lived in Boston attended a few. Dr. Kennelly who lived in Cambridge contributed by mail. Being so conscious of the influential opposition caused us to go over and over the work, shrinking long definitions and throwing ^{out} doubtful definitions and symbols.

Because of the opposition we called our report a preliminary report and had it printed with a tear sheet on which members were asked to answer the following questions:

- (1) With the exception of the changes suggested by you below, are you in favor of the acceptance and adoption of this Preliminary Report by the Institute?
- (2) If you are not in favor of its acceptance, what are your reasons for its rejection?
- (3) What criticism of the Report do you make and what changes in the Report do you suggest?

Signature

Date

That report contained about one hundred and twenty-five definitions, about sixty literal symbols, about thirty-five graphical symbols and a page and a half on tests and rating.

That report, dated September 10, 1913 was favorably received and is bound in Vol. 1 of the Proceedings. Subsequent reports have been made by a number of succeeding committees and were published in 1915, 1922, 1926, 1928, and 1931.

Before we proceeded as far as The Institute of Radio Engineers, I felt that Goldsmith was made to order for development of the Institute. From past experience one in my shoes naturally felt that any employee of a commercial radio company might lose his job because the commercial company might fail or change

However, the first was done and - Jim glad to say - (9) not the second.

management and a commercial or government radio employee might have to move at any time or his boss might tell him to pay less attention to the Institute. I felt that Goldsmith would not be interfered with by any of those circumstances.

By the beginning of 1914, I felt that if Goldsmith would stick by the Institute, the Institute's existence would be assured. But he had often wanted to give up the responsibility. In fact he wrote me as early as January 1912 and as late as February 1914 to that effect. After the 1914 letter that subject was the chief topic of our conversation whenever we were together up to the summer of 1914 when he went to Europe. Just before he sailed he said he would decide on that trip and let me know once and for all when he got back whether or not he would stick to the Institute. I met him at the dock when he landed. He did not waste any time after saying hello, in telling me what he knew I wanted to know so badly. He said he would stick. To me that was a red letter day for the Institute.

It was on September 23, 1914. He also said he would give financial assistance. He said he would advance \$150 per issue and take a \$100 note or more if necessary. To me that was insurance that the I.R.E. would be kept going until radio grew enough and the Institute grew into the self-supporting stage.

That trip by Goldsmith to Europe cleared up another Institute matter. Or rather it dampened a hope or created a perpetual doubt. With the principal in mind of waiting the Institute to be international I wanted Goldsmith to try to arrange for sections in Europe. He consented to do this and wrote me from abroad that Europeans were interested.

A received a letter from him dated July 29, 1924 in which he said he was working hard on those Paris and Vienna section ideas, and had finished Number 2 and was working on number 3 of Volume 2 of the Proceedings. Then the World War started. The next I heard from Goldsmith was to advise me that he had managed to get out of Austria with all of his skin and some difficulty about his baggage. I do not believe any of the I.R.E. people thought that trying to start

on the last boat leaving Garda for Desenzano!

The editing of the Proceedings + the securing of papers in those days was really a job anyone would have liked to give up. ahg

sections in Europe, started the world war, but the World War did stop the project then and seemingly established a precedent for cold feet on the subject of foreign sections. Except in Canada which isn't another nation to the extent of producing many cold feet on either side of the ^{thin} line. However, I.R.E. being international avoided taking a part in the World War, and foreign vice presidents are elected.

In trying to convert people in 1908 and 1909 to the Institute idea one possible Institute feature seemed to have a strong appeal. It was that an Institute would collect radio books, a library. The library became a nuisance subject that took time from the consideration of more immediately practical subjects. Starting with a few radio books the idea would expand to include related and unrelated books, a librarian, a reading room, a smoking room, a billiard room, etc. The fact that we could not afford desk space would not prevent the library thought from being expanded to a club house with bar and turkish bath.

That trend of time consuming discussion was cut short by Secretary Pope of the A.I.E.E. at the first Wireless Institute meeting in the Engineering Building. He said we could arrange to use the Engineering Building Library.

The desires that led up to the club idea resulted in meeting to eat together before meetings, banquets and still later in conventions.

The Institute of Radio Engineers did not have conventions early in its history but it did start having banquets or dinners quite early in its existence. Not just eating together before a meeting but affairs called dinners where the evening was spent in a dining room eating or listening to after dinner speeches. The first of the dinners of that kind was given to me because I was going to move to Seattle. The dinner was given at Monquin's a place famous for its wines in pre-prohibition days. The dinner program and menu at the time was believed to be funny. It read as follows:

Dinner held by the Board of Direction of The Institute of Radio Engineers on the occasion of the departure of past president, R. H. Marriott for Seattle, Washington. Officers: L. W. Austin, President, John Stone Stone, vice president, John Hays Hammond, Jr., Treasurer. Emil J. Simon. Secretary. Managers: R. H. Marriott,

John L. Hogan, Jr., Guy Hill, Roy A. Weagant, and Alfred N. Goldsmith, Editor.

"73" "NIA"

A periodic Heterodymer of the Institute of Radio Engineers in
the Receiving-Room of Mouquins Trans-Sixth Avenue Station. New York, December
23, 1914.

First-Phase

Menu

(Note: We are enjoined from serving courses at a frequency exceeding 250 per second)

Automatic Starter to Order

Rat-tail of Non-adjustable Bare Blue Points for Bivalve Detectors

Gumbo Electrolyte in Insulating Container of fixed Capacity

Portable Submarine Equipment in Dielectric

Brush Discharges

Oval Insulators

Sans-Filet of Bass

Pocker Ultraudion Detector, Spud Type

(Licensed for use in Dining-Room only)

Vol-~~an~~-Vent of Jiggers, with Spherical Electrodes

Fancy Sleet, with Plain Aerial

Etherized Chicken, on Switchboard with Protective Devices

Cohered Low Temperature Cream, with Spade Electrôdes

High Powered Cheese

Radiation from Tree Antennae

Ungrounded Coffee

(Note: Saturation point should not be exceeded. Avoid examining tikker).

Second Phase

John Stone Stone, Chief Operator

Atmospheric Disturbances by Eminent Static Producers, on Current Topics

Antennae I have Known

Secrecy in Radio

Prevention of Decrement

Financial Radio Research

Experiments in Radio Patent Litigation

All About Radio

Specifications for Building Radio Engineers

How to make a Wireless Station

Who Invented Radio?

Il-Lodge-ical Circuits

Radio in the Time of Rameses I

Radio in 1914

Radio in 1926

Radio in 2014

Trans-New York City Radio Service

Trans-ient Service

How to Raise Injunctions

Those present at the dinner were:

John L. Hogan, Jr.
 Emil J. Simon
 H. Boehme
 J. B. Shelby
 G. B. MacMahon
 Herman Schlang
 Guy Hill
 W. D. Terrell
 D. Sannoff
 E. B. Pillsbury
 Julius Weinberger
 Julian Barth
 William H. Priess
 Charles E. Apgar
 Geo. B. England
 R. H. Marriott

Alfred N. Goldsmith
 Harold R. Zeamans
 R. A. Weagant
 E. H. Armstrong
 Chas. Wm. Taussig
 Paul F. Godley
 Frank King
 L. G. Pacent
 Capt. E. Heurl
 Philip Farnsworth
 A. H. Janke
 A. Veller Sloan
 J. C. Gregg
 E. P. Knowles
 L. Espenschied
 Frank H. Fay

This dinner was photographed. I have a copy.

John Stone Stone could not attend the dinner. He gave a special dinner to Mr. Marriott and members of the Board at the Brovoort House, 8th St. & Fifth Ave., December 18, 1914.

The secretary-treasurer work was first run on nothing, than on a shoestring. The 1909 Wireless Institute books of Williams and Thurston were audited by James Sawyer. I first knew Jim as a draftsman working on Harry Shoemaker's patent and

other drawings in 1901. In 1909 I knew him as an accountant. Later I knew him as superintendent of construction.

About 1911-12 The United Wireless Telegraph Company had been the best salesman of Radio Service for ships in the United States. Gernsback and his Modern Electric Magazine and Electro Importing Company had been the best salesman to amateurs. Colonel Firth of 81 New Street had been the best salesman to the Navy and other government departments.

Firth had sold Shoemaker apparatus to the government. He was selling Picard tuners and detectors. Firth, Farnsworth and Picard were the Wireless Specialty Company. At the time Simon became secretary of the Institute of Radio Engineers he was associated with Firth at 81 New Street in a firm called the Wireless Improvement Company. Ralph Langley and Miss Federson also worked in these offices. After Simon became secretary, 81 New Street was where the Board of committees sometimes met in 1912. Also Langley was assistant secretary and Miss Federson took the I.R.E. messages when Simon and Langley were absent. She is now with Allen D. Cardwell who still manufactures air condensers and other radio parts. She has probably been connected with the manufacture and sale of radio as long as any woman in this country.

Emil J. Simon, beginning back in the Wireless Institute days, did a lot of things for the Institute. For example; he became acquainted with John Hays Hammond, Jr. got him elected treasurer of the Institute of Radio Engineers and obtained the every day use of an office in the offices of John Hays Hammond, Sr. for I.R.E. and the occasional use of the Hammond's handsomely furnished and decorated board room for I.R.E. Board meetings, all free for the year 1914 at 71 Broadway, where the rent for such facilities was high. That was the first time a room or office was set apart for the Institute. In some cases, the secretary was not located at the Institute office but kept in touch with the office by phone, mail and occasional visits. For example, Miss Malkind ran the office at 111 Broadway during 1915-17 and Misses White and Durne ran the office at 37 West 39th Street, next door to the Engineers Building, during 1924-25, by remote control from the elected secretaries.

Historical Display Suggestions

Old documents, old apparatus, copies or pictures of such and old data are of interest to some people. A locked glass case or two containing such displays should be interesting at conventions.

Owners of such curios will probably loan them if they are given suitable credit and are sure the curios will be returned.

Here are some of the things I have that do not take up much space and may be interesting:

British Admiralty Wireless Instructions 1901

Call list of United Wireless Stations 1910

Marconi Apparatus catalogs old English and first American

Photo of U.S. wide coherer receiver used by R.H. Marriott in 1900

The "Aerogram Magazine" 1909

Grand Opera by Radio, Caruso broadcast, scheduled broadcasts, advertising predictions, etc. Jan. 1915 to 1917

Photostats of papers and magazines

Wireless Institute Proceedings

Vol. 1 and 2, I.R.E. Proceedings in brown covers

Wireless Institute application blanks

Society of Wireless Telegraph Engineers constitution

Message sent by R.H. Marriott from station built by him to his parents in 1902 as delivered on W.U. blank

Marconi Coherer

Polarized relays used with coherer sets 1901

Small induction coil to illustrate Marconi transmitter, used in 1902
Marconi suit.

Small special wavemeter, 1912

Brown amplifying relay, 1910

Switches to sectionalize inductances and capacities in tuners 1908

Some special experimental tuners 1908

Electrolytic detector, 1904

Electric detector (1904) made into four carborundum detectors 1906

Perikon detector 1909

Silicon detector 1909

Steel-oxidized iron parts of detector as used 1902

Some old hot wire meters 1908 and 1912

Sullivan 7200 phones 1909

The first audibility meter, about 1910

Because an instrument or document of this kind may require explanation that would take up more space than the exhibit, the exhibits may be numbered and put in the case with correspondingly number explanations on a wall by the case.

If such an exhibit is made this year offerings and suggestions will probably be made that will provide for improvement and variety in future years.

More notes will probably be forthcoming from time to time. I want to discuss some points with others who I hope to contact from time to time.

Some of my records were destroyed in moving from coast to coast. Some I.R.E. records probably exist in my files under other subjects and may be found from time to time.

The first time I heard Armstrong's oscillating receiver was a big event to me. Goldsmith, Hogan, Weagant and I attended some I.R.E. meeting, as I recall it, and after the meeting Armstrong invited us into his laboratory at Columbia to see and hear his receiver. We spent so much time attending I.R.E. meetings or committee meetings or Board meetings that I have not been able to identify that meeting. That part of the evening with Armstrong was a sort of condensed I.R.E. meeting and preliminary disclosure. Condensed to fit the small room. I think some others than those indicated above were present but I do not remember who they were or the exact date. Armstrong and I have had the following recent correspondence about that event. I believe that correspondence tells the story better than any equally brief story that I might write.

June 2, 1937

Prof. Edwin H. Armstrong,
Columbia University,
N.Y.C.

Dear Armstrong:

In some historical notes that I am writing I want to tell about you taking us from Fayerwether hall after an IRE meeting (down into a small room in the basement of the next building I think) and showing us the audion outfit that oscillated and produced beat notes (from Sayville I think) and the tall coils and the funny way the beat notes changed when one waved his hand at a coil.

We were greatly impressed and went away wondering how you had connected the audion to make it oscillate and work on the received CW (we called it CA, constant amplitude) to produce beats. We did a lot of talking but none of us seemed to know, that night, how the audion was hooked-up. However the next night (as I recall it) Weagant told me he had tried connections in the meantime and had found an audion arrangement that produced beats.

I believe I made notes about your demonstration at that time but so far I have not found them.

Because I did not know how you had the audion connected causes me to think the date of your demonstration may have been before March 3, 1915. Other notes indicate that it might have been on December 2, 1914. Goldsmith,

Hogan and Weagant were there, but I do not remember who else.

When you get time I wish you would straighten me out on those points.

Cordially yours,

R. H. Marriott

Columbia University
City of New York

Department of Electrical Engineering

June 11, 1937

Mr. Robert H. Marriott,
1470 E. 18th St.,
Brooklyn, N.Y.

Dear Mr. Marriott:

Thank you very much for your letter. I am always glad to take time to get history straightened out.

If my recollection serves me correctly there were a couple of times when I had the pleasure of showing you the funny beat notes. One was the occasion when Goldsmith, Hogan and Weagant were there, but there was a second occasion when you alone were present. That was the night that the Goldschmidt station at Tuckerton opened up and you wanted to check up on them and see what interference they were causing in this part of the world. Nothing very serious happened as we were able to receive Glace Bay on 7800 meters through them while they were operating on 7500. The date of this can easily be fixed because it was the night of an Institute meeting and after listening to signals for awhile we both went over to the meeting where Simon was presenting a paper on three-phase quenched spark systems. During the discussion you mentioned the fact that Tuckerton was now on the air and that you had been listening to them earlier in the evening in my diggings. On both this occasion and at the time that the group was there we received signals from San Francisco and Clifden as well.

I have a faint recollection that you were there on another occasion and if it comes to mind I will be glad to write you. Meanwhile, if there is anything further along these lines please let me know and I will be glad to dig it up.

With best wishes.

Sincerely yours,

E. H. Armstrong

My notes show that the Goldschmidt alternator was due to start at 7 P.M., May 13, 1914 and that I went to Tuckerton the next day to inspect it,

as U.S. Radio Inspector. The Proceedings show that Simon read the paper May 13, 1914. Notes indicate that I was at Columbia on May 11 and 12 and attended a Pupin lecture on May 6. However, I have not found a note that says on what date Armstrong demonstrated to Goldsmith, Hogan, Weagant and me. It was some time before May 13, 1914.

One man did almost everything at times in the early history of the Institute. That is one man wrote the meeting notices, had them printed, addressed them, mailed them, opened up the meeting room, acted as chairman, presented a paper he had written, had the paper printed and collected or made up the funds to print the paper and mail it. I did about those things and then Goldsmith came along and did about the same. At times, Hogan, Espenschied, Simon, Sarnoff or others carried much of the financially unprofitable Institute. The Institute frequently approached a one-man, two or three men conditions. Actually the chairman was such a large per cent of the audience in the beginning that the chairman did not stay on the platform in his chair but went down in front of the speaker to increase the number in front of the speaker by several per cent. Naturally the audience tried to help out by discussing. An audience of five then probably discussed as long as an audience of five hundred does now.

When Goldsmith told me he would stick with I.R.E. he meant, as I understood it, to stick as Editor of Publications and as a Board member but about four years later the office of secretary landed on him again. He had succeeded Sidney Williams and Eugene Thurston as secretary and treasurer of the Wireless Institute in 1911. E. J. Simon was secretary of I.R.E. until 1915, then David Sarnoff until 1918. In 1918 the job of being secretary again fell on Goldsmith. Both the title and the office equipment found a home with Goldsmith at the College of the City of New York.

How the Institute landed on a very few about that time, World War time, is indicated by the fact that Prof. G. W. Pierce was president of I.R.E. for the two years including 1918 and 1919 and never attended a meeting. Hogan as vice

president and Espenschied and Sarnoff as directors and secretary Goldsmith and treasurer Hubley were I believe the working crew of the Institute at that time and their attention to the Institute was sidetracked by the war. Others were taken completely away from I.R.E. affairs by the war, after the United States went into the war and in the early post war period. The war put many into radio and much money into radio equipment but that did not count then, it counted later.

The part of the World War from 1914 and 1917, before the U.S. became a combatant, or the patent war which was related to the other war, brought about a growth in the Institute. It brought more radio experts to New York than had previously been in New York at one time. Not only to New York but to other places such as Seattle. They increased the attendance at Institute meetings, increased the membership and caused Institute banquets at New York and Seattle.

Germany, a party to the patent war and represented in the U.S. by the Atlantic Communication Company, had sent Professor Jonathan Zenneck and Professor Ferdinand Braun to the U.S. in 1915 to serve as experts. Braun was a radio pioneer dating back to 1896 in the development of Telefunken. Early German drahtlose companies bore the name Braun. Braun, Braun-Siemens, Siemens-Halske, to Telefunken in Germany and to Atlantic Communication Company in the U.S. Zenneck was the author of the most-used radio book of that day.

A banquet at Luchow's Restaurant on 14th Street, New York, April 24, 1915 was given to Zenneck and Braun by I.R.E. I cannot identify all of those shown in the photograph. There are fifty-five. Those at the head table are Pierce, Braun, Stone, Zenneck, deForest, Tesla, Lowenstein, Goldsmith, Judge Mayer, Dr. Frank, Hally, and Harriott. Mayer was the Federal judge in an important patent trial at that time. Dr. Frank was, and is now I believe, the local Telefunken representative. Mr. Hally was the head of the Marconi W.T. Co. of America. The I.R.E. banquet was the friendly meeting ground for all sides.

Of those others present at the I.R.E.-Braum-Kenneck banquet twenty-two years ago I now recognize the following in the photograph. On the right reading from the head table, Warren Hubley, Roy A. Weagant, Guy Hill, Emil E. Meyer, E.F.W. Alexanderson, George Clark, Julius Martin, Lieut. U.S.N., Mahood, H. O. Boehm, Walter H. Rumphroy, H. Alfred Janke, Lester Israel Jones, Julian Barth, Louis G. Facent, William Dubilier. On the left: Dave Sranoff, Emil J. Simon, George deSouza, Frank H. Waterman, Cloyd Marshall, J. Andrew White, Ralph Langley, Gage.

To better visualize the situation you can assume (and probably correctly) that Telefunken through its patents and through the licenses or rights which the Atlantic Communication Company had obtained, had the strongest radio patent situation in the United States. It was a fight between Telefunken backed by Germany and the Marconi interests, back by England.

That banquet indicated and increased the interest in I.R.E. It produced and increased enthusiasm. Institute membership and affairs increased until about the time we went into the war, then the membership curve sagged and flattened out.

A banquet under the auspices of the Seattle Section of I.R.E. was held at the Butler Hotel in Seattle March 18, 1916. The patent battle in this instance was between the Marconi W.F. Co. of America and Kilbourne-Clark, a Seattle firm that manufactured radio apparatus and had started the ship owners radio service that operated ship stations. Outstanding radio men of that time were present and came together in a friendly way only at the I.R.E. banquet. I have to give the list of those present partly from memory. During the day (March 18) I, as naval expert radio aid at the Puget Sound Navy Yard, was enabled to take the following for a trip on a naval vessel from Seattle and back for the banquet: L.F.S. Betts, Jas. I. Congrave, F.H. Waterman, Roy Weagant, Payne, C.B. Cooper, G.W. Pickard, V. Ford Croaves, F. H. Ryan, F. A. Kolster, Ellery Stone, Lieut. E. J. Blankenship, Dr. Magnusson and one or two others. Also at the banquet

were Commander W. B. Wells, George Hastings, Frederick Simpson, Phillip Farnsworth, Hall, Zenneck, Roy Thompson, T. M. Libby, Fred Grinnell, and other members of the Seattle Section. Those were big things in those days. The I.R.E. brought radio men together in a friendly, as well as instructive, basis where nothing else could. I have been asked why I.R.E. has the Fellow grade. As I recall, it was the result of one of the many discussions on how to get more money, and because A.I.E.E. had such a grade.

The A.I.E.E. had Fellows. We in I.R.E. had the same classes of membership but we did not have the Fellow grade. We needed more money. More money from more members or more from the existing members or both. In 1916 we copied another A.I.E.E. precedent by establishing the Fellow grade with its higher dues.

Harold R. Zezans attorney for I.R.E. and Goldsmith got together frequently to talk about the philosophy of life and to decide how humans should behave. Zezans was interested in Goldsmith's new interest (The Wireless Institute) and came to meeting with Goldsmith. As I recall, that is about 1910. While attorneys Philip Farnsworth and William Bissing were early members, they were patent attorneys and did not practice other law. Zezans was a general practitioner and the applying for incorporation papers (gratis) fell to him.

Banquet of the

In regard to the ~~I R E~~ Seattle
Section of the Institute of Radio
Engineers held on March 18 1916 I
have, since the foregoing was written,
found some other items of interest
including the following. There is
a copy of the commandante (Robert E.
Covetz) order providing for the Naval
vessel and visit to the Pacific Coast
Torpedo station (where the Radio transmitters were
located) the Navy Yard and back to
Seattle. There is a copy of a printed
invitation ^{card} to attend the dinner. There
is a page of "The Wireless Age" for June
1916 showing a photograph of the group
assembled back of the guests table at the
~~dinner~~ banquet. The photograph

later commander-in-chief of the
U.S. Navy

indicates that the following were
 also ~~attended~~ at that banquet.
 Warren E. White, C. A. Kilbourne,
 N. O. Nelson, Charles Robinson,
 E. L. Skel, P. T. Nagle, J. R. Tolmie,
 and B. A. Engholm.