
THE AMERICAN SOCIETY OF REFRIGERATING ENGINEERS •

Chapter 2

First and Last - The Truth

"We have started on a mission similar to that which other great societies in the engineering world are so ably accomplishing, and considering that our particular scope of operation touches on almost every department of human interest, our aims, if attained at all, must be reached by manful, honest effort. The Grail of the engineer must be first and last - The Truth."

John E. Starr
1904

Refrigeration as an industrial practice was already established by 1885. In the United States, which was a recognized world leader in refrigeration at this time, the main applications were the production of ice and beer and cold food storage. Australia and New Zealand were also industry leaders. Their primary uses were mechanical refrigeration for food preservation, for shipping frozen meats to other countries and for producing beer.

By 1900, manufactured ice in the United States could be made for the same low cost as storing natural lake ice, and it was not weather dependent. One contributing factor was due to polluted lakes and rivers near metropolitan areas, ice harvesters had to go further away to obtain their supplies, which increased their shipping costs and provided ice manufacturers' with claims that their product was purer.

"Volumes were written by the two sides as between the merits of lake and machine-made ice....Much that was written was technically unsound as reported from both sides," wrote Willis R. Woolrich in 1969. Those who harvested and sold natural ice touted it as having a greater cooling capacity. Those who manufactured ice said there was no difference, except manufactured ice was made from distilled water.

Ploughing and storing ice on the Hudson River above New York City in 1870s.

For many years, there was an intense competition for the ice market. With the invention of electric and gas household refrigerators, the market changed for household ice and the natural ice market virtually disappeared by 1950.

Air conditioning or comfort cooling, as it was known then, was not used in every day practice in 1904. There were a few installations, however, which were used primarily to keep valuable records and manuscripts.

Many other uses of refrigeration that are considered modern conveniences were also common in 1904. These include artificial skating rinks, bakery and candy cooling, fur storage, cooling of drinking water and the use of refrigeration in the making of camera film and ice cream.

Other industries that looked to refrigerating engineers to help make their businesses more cost effective included textiles, tobacco, perfume production, chemicals, and mining. Civil engineers sought the expertise of refrigerating engineers in the building of shafts and tunnels.

Issues Leading to Organization

In the United States the only engineering organization suitable for engineers interested in refrigeration was the American Society of Mechanical Engineers (ASME). Although some very outstanding papers had been presented at ASME meetings from 1889 to 1892, by the turn of the century, ASME members interested in refrigeration "found very little on the programs bearing directly on their professional work," recalled Harry Sloan from Vilter Manufacturing Company. They "had been in a huddle in a corner discussing their problems, but with a new society the whole program would be of interest."

Another factor that inspired the organization of a society of refrigerating engineers was the formation of the American Ice Machine Builders Association in 1903. The work of the American Ice Machine Builders Association, whose members were primarily manufacturers, pointed out the advantages of working together, cooperating with other organizations, and of sharing information. More than one-half of the men who would join the refrigerating engineer's society were also members of this association.

In addition, technological advances and new applications were prompting a need for fundamental data on which to base standards within the refrigeration industry. Some engineers felt that it was time to form a scientific society to meet this need.

The Society Organizes

William H. Ross, who was employed by *Cold Storage and Ice Trade Journal* and was secretary of the Eastern Ice Association, organized a meeting of thirty to forty refrigeration engineers on April 2, 1904 at the ASME headquarters in New York City to discuss forming a new society. John E. Starr was elected temporary chairman to run the meeting, and Mr. Ross acted as secretary.

William Ross

Mr. Sloan recalls the meeting: "He [Mr. Starr] opened the meeting with a carefully prepared talk pointing out the needs of such a society, and predicting a rapid growth and secure future for the refrigerating industry. This coming from the leading consulting engineer, who had engineered many large projects, such as cold storage warehouses, distribution of refrigeration by pipe lines through city streets, etc., presented in a very earnest and convincing manner, resulted in carrying the unanimous favorable action of the meeting. I do not remember a single dissenting voice when the subject was opened for discussion."

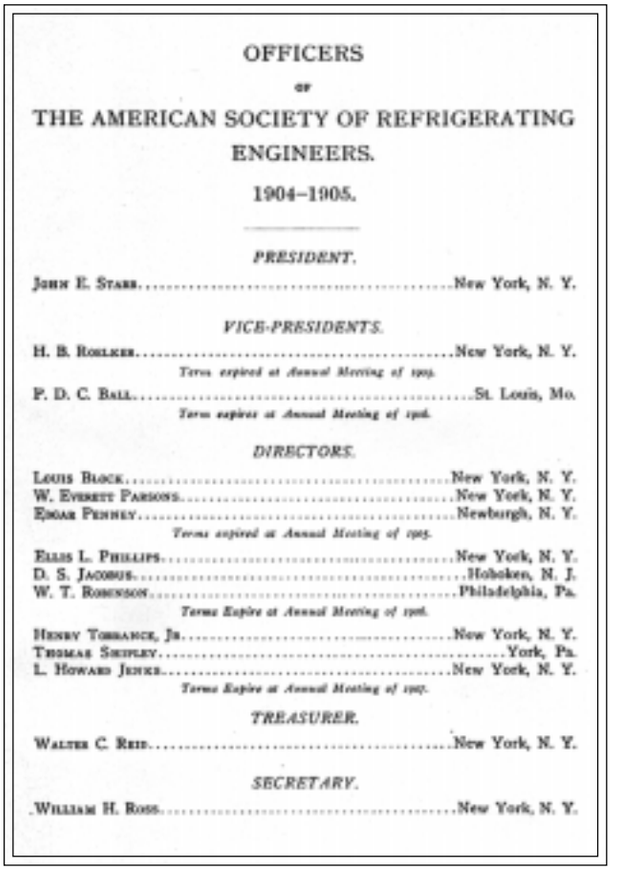
Following the discussion, a committee was appointed to draft a constitution and by-laws. The committee consisted of L. Howard Jenks, chairman; John E. Starr; W. Everett Parsons; James Wills; Henry Torrance, Jr.; William H. Ross; and George Richmond. Mr. Richmond died before the committee's work was completed. E.L. Phillips took his place.

John E. Starr

On December 4 and 5, 1904, in New York City, these engineers met again to adopt the Constitution and By-Laws and to elect officers, thus forming The American Society of Refrigerating Engineers – the only engineering society in the world solely dedicated to promote the arts and sciences connected with refrigerating engineering.

There were seventy-four charter members of this new society. The officers and directors elected at the meeting were:

President	John E. Starr
Vice Presidents	P. De C. Ball and H. B. Roelker
Treasurer	Walter C. Reid
Directors	W. Everett Parsons; Henry Torrance, Jr.; E. L. Phillips; D. S. Jacobus; Howard Jenks; Louis Block; Edgar Penney; W. T. Robinson; and Thomas Shipley



OFFICERS
OF
THE AMERICAN SOCIETY OF REFRIGERATING ENGINEERS.
1904–1905.

PRESIDENT.

JOHN E. STARR.....New York, N. Y.

VICE-PRESIDENTS.

H. B. ROELKER.....New York, N. Y.
Term expired at Annual Meeting of 1905.
P. D. C. BALL.....St. Louis, Mo.
Term expires at Annual Meeting of 1906.

DIRECTORS.

LOUIS BLOCK.....New York, N. Y.
W. EVERETT PARSONS.....New York, N. Y.
EDGAR PENNEY.....Newburgh, N. Y.
Terms expired at Annual Meeting of 1905.
ELLIS L. PHILLIPS.....New York, N. Y.
D. S. JACOBUS.....Hoboken, N. J.
W. T. ROBINSON.....Philadelphia, Pa.
Terms Expire at Annual Meeting of 1906.
HENRY TORRANCE, JR.....New York, N. Y.
THOMAS SHIPLEY.....York, Pa.
L. HOWARD JENKS.....New York, N. Y.
Terms Expire at Annual Meeting of 1907.

TREASURER.

WALTER C. REID.....New York, N. Y.

SECRETARY.

WILLIAM H. ROSS.....New York, N. Y.

The business affairs of the Society were managed by a committee called the Council. It consisted of the Society's president, two vice presidents, treasurer and nine Members or Associate members. The secretary was permitted to take part in the Council's deliberations but could not vote.

During the first meeting of the Council, held on January 14, 1905 in New York City, William H. Ross was appointed as secretary of the Society at a salary of $25.00 per month, out of which all office expenses would be deducted. President Starr appointed standing committees on finance, publications and membership, and the Council voted to have the Society incorporated under the laws of the State of New York, which was done on August 30, 1905. In addition, the Council voted to locate the Society business offices at 258 Broadway, New York City.

First Annual Meeting

Exactly one year after the December 1904 organizational meeting, the Society convened its First Annual Meeting in the chambers of ASME in New York City on December 4 and 5, 1905. Eight papers were presented and debated on such topics as plate and can systems for manufactured ice, pipe line refrigeration, and carbonic acid and refrigerating machines.

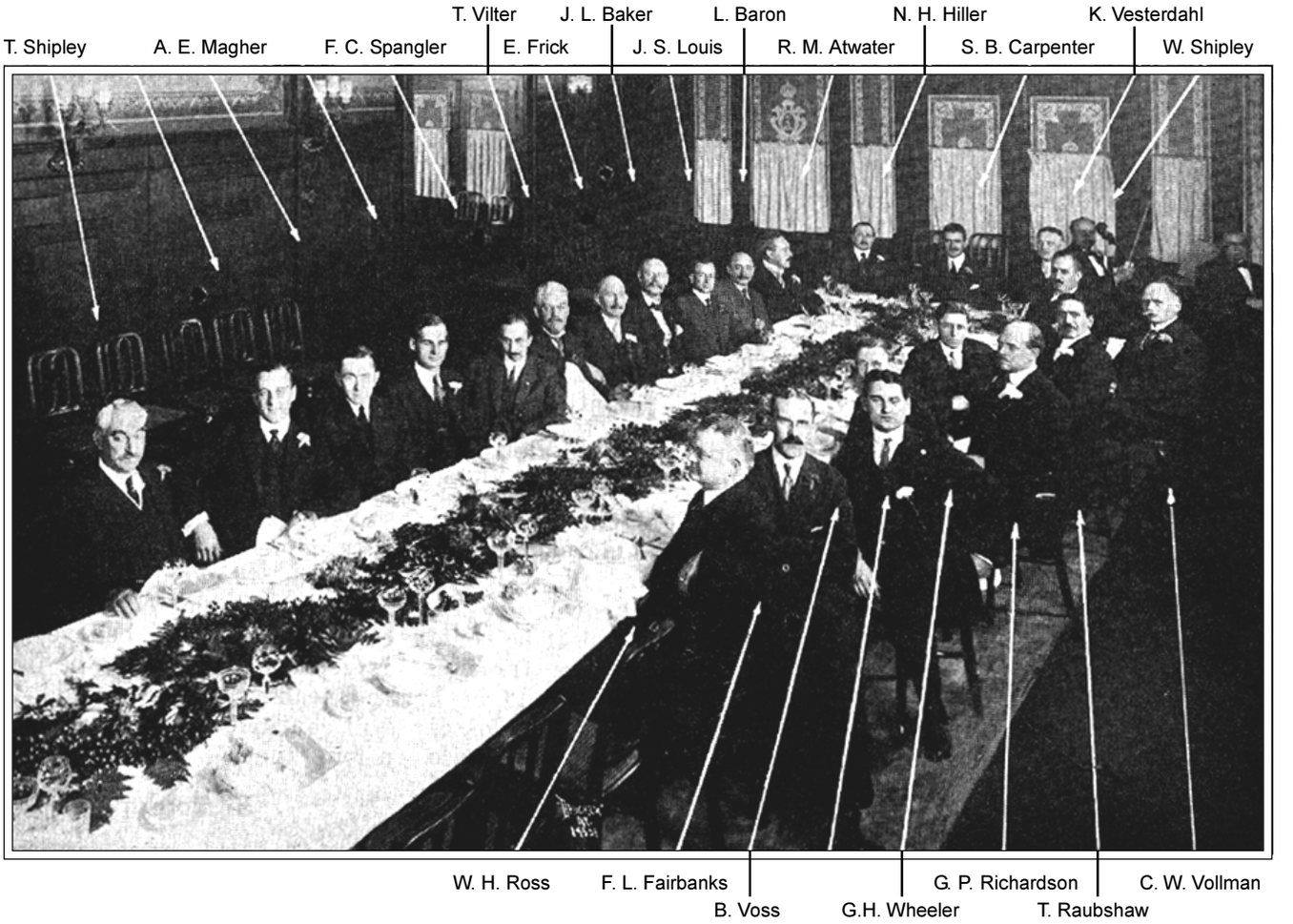
To comply with the laws in the State of New York, the date of the annual meeting was specified in the Society's Constitution and By-Laws. The founding members specified that the date "shall be on the Monday before the first Tuesday in December" so the Society meeting would be held as close to the ASME meeting as possible, thus allowing out-of-town members of both societies to conveniently attend both meetings.

Characterized as the "dean of refrigerating," John Starr was the most respected refrigerating engineer in the first half of the 20th century.

During his address, President Starr eloquently defined the Society's guiding principles:

"To define our field in a word, I may say that we claim as our own all that relates to the produc-

The Refrigerating Engineers in Session, President Parsons Has the Floor and Vice-President Starr Backs Him Up



This photograph has long been identified as a view of the Society's first annual dinner at Luchow's Restaurant in New York. It is actually a view of a Refrigerating Machinery Contractors Association dinner of about the same date (1905). Some of the men present, however, are the same refrigeration leaders who founded the American Society of Refrigerating Engineers in 1904.

Charter Members

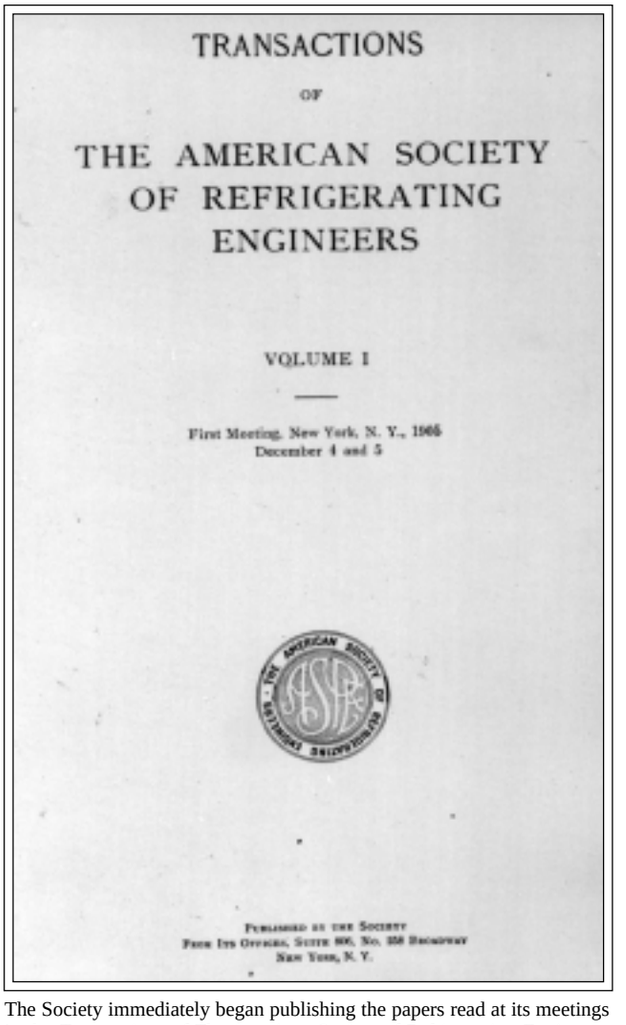
The American Society of Refrigerating Engineers

Joseph E. Aue
P. De C. Ball
Victor H. Becker
Carl Behn
George E. Berna
J. C. Bertsch
Louis Block
Samuel H. Brubaker
Martin R. Carpenter
R. C. Carpenter
Albert A. Cary
Charles L. Case
Fred B. Church
Harold W. Cole
John Glenn Collins
Madison Cooper
A. P. Criswell
J. J. deKinder
John S. DeHart, Jr.
M. Dennedy
Charles Dickerman
Frank J. Flocke
Ezra Frick
Edward N. Friedmann
J. C. Goosmann
Oswald Gueth
Harry M. Haven
David J. Havenstrite
N. H. Hiller
D. L. Holden
D. S. Jacobus
L. Howard Jenks
Rockwell King
Charles L. Krum
John M. Larsen
John Levey
J. S. Louis
George L. McCarthy
W. H. Manns
F. E. Matthews
Peter Neff
J. F. Nickerson
L. C. Nordmeyer
C. C. Palmer
W. Everett Parsons
Edgar Penney
Ellis L. Phillips
F. W. Pilsbry
Thomas L. Rankin
Walter C. Reid
W. T. Robinson
H. B. Roelker
William H. Ross
Samuel J. Rowe
Louis M. Schmidt
Samuel J. Shipley
Thomas Shipley
Alfred Siebert
John E. Starr
Henry Torrance, Jr.
Alfred P. Trautwein
Karl E. Vesterdahl
Henry Vogt
Carl W. Vollmann
Gardner T. Voorhees
Bernhard Voss
John C. Wait
Karl Wegemann
Robert A. Whelan
Frank H. White
L. Williams
James Wills
Fred W. Wolf, Jr.
Otto C. Wolf

tion of temperatures, below the ordinary, for useful purposes....

"We have undertaken the responsibility of speaking with authority, of finding the truth, and proclaiming it, and a critical world will hold us to our task or pass us by as unworthy.

"Our forum, however, must be a forum for all the membership, and its discussion for the good of all. The truth is our aim and the seeking of it our work. Within our doors a perpetual truce should prevail, and the sword and buckle of everyday strife is to be laid aside at the threshold."


TRANSACTIONS

OF

THE AMERICAN SOCIETY OF REFRIGERATING ENGINEERS

VOLUME I

First Meeting, New York, N. Y., 1906
December 4 and 5

The Society immediately began publishing the papers read at its meetings in the *Transactions of The American Society of Refrigerating Engineers*. The *Transactions* also included minutes of Society meetings.

In echoing the theme of cooperation and exchange of information that inspired the founding members of the Society, President Starr said, "In carrying out our work...there will be no feeling of jealousy between ourselves and our brother organizations...whose field embraces our own, unless it be that fair and honest emulation to be of use to the world."

The financial report, given by Treasurer Walter C. Reid was very encouraging. The Society had received $1,495.10 in revenue during its first year and expended $892.93, for a surplus of $602.17 cash on hand.

Membership

The Society's Constitution and By-Laws established three levels of membership: Member, Junior and Associate. Each member paid an initiation fee of $5.00, and membership dues were set at $10.00 for Members and Associates and $5.00 for Junior members for the first six years of membership, after which their dues would be the same as Members and Associates.

Each member received a membership certificate and could purchase an emblem pin, with a different color defining each level of membership -- dark blue for Members, white for Associates and light blue or turquoise for Junior members. The emblem was the seal of the Society and measured 5/8 inch in diameter.

Although the Society was organized as a national institution, by 1906 it already had members from Canada, England, India, the Argentine Republic, Australia and New Zealand. Membership in 1906 totalled 146.

Primary Issues and Early Actions

The objective of the Society was to conduct research, develop standards, hold technical meetings and present and publish technical articles in journals and handbooks. The founding members of the Society immediately went to work to meet these objectives and the greatest need of refrigerating engineers: the search for fundamental data upon which more accurate data could be published and standards developed.

In an effort to share information, the proceedings of the Society's annual meeting were published and made available for sale each year in a bound book, titled *Transactions of The American Society of Refrigerating Engineers*. It was distributed to other technical publications that might find the technical papers published therein of interest.

Early actions of the Society reflected the members' earnest desire to meet the stated objectives of their society. During the First Annual Meeting, for example, members unanimously passed a resolution recommending that the U.S. Congress appropriate sufficient funds so the U.S. Department of Agriculture could equip and maintain a cold storage plant for the purpose of research. In addition, the Society responded to the issue of establishing a standard unit or "ton" of refrigeration by appointing a committee of five to work with other engineering organizations.

Another example of an early action by members is that at the January 14, 1905 meeting of the Council, members voted to accept an invitation from Thomas Shipley, chairman of the York Manufacturing Company of York, Pennsylvania, to visit the company's test plant to conduct tests on mechanical refrigeration.

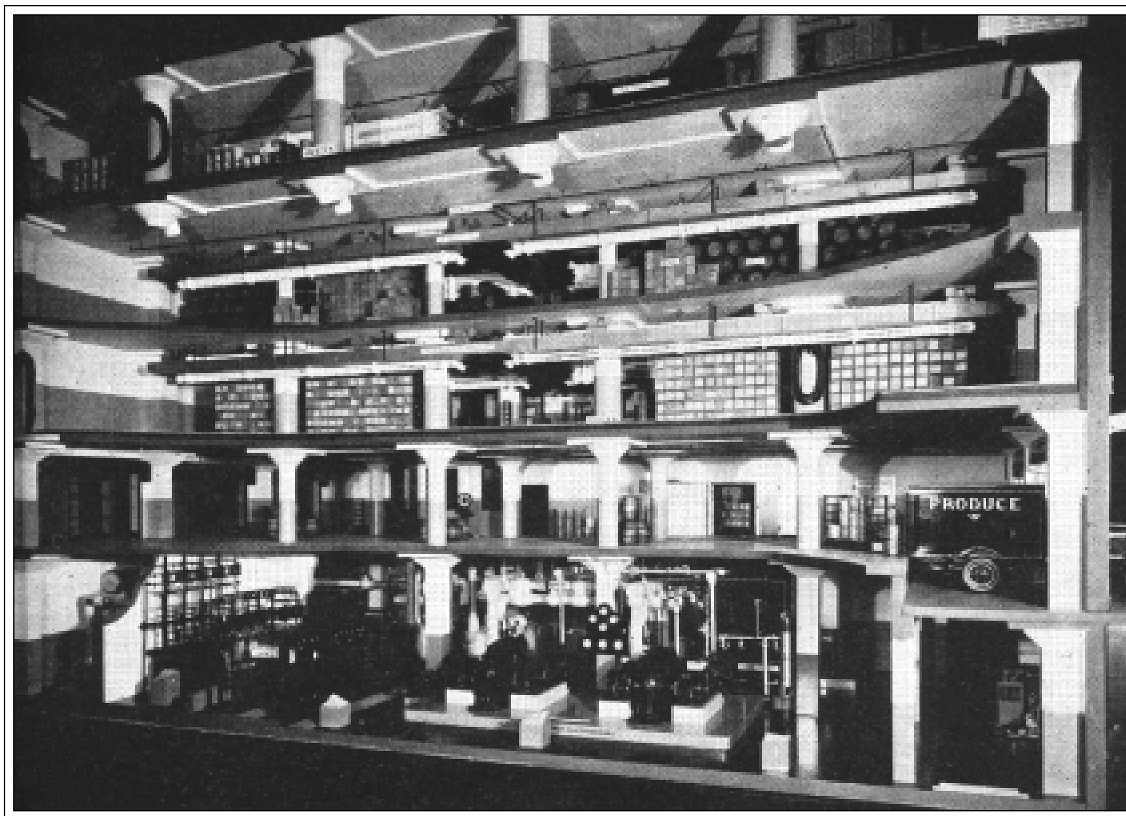
The actions taken during the Society's first meetings, as well as the members' dedication to the work of the Society, planted the seeds of research and committee efforts that would provide significant results and benefits to the refrigerating industry for years to come.

1916 Beefsteak Dinner
The "old fashioned beefsteak dinner" in 1916 was held at Murray's Restaurant on December 5.

In 1917, the *Journal of The American Society of Refrigerating Engineers* reported tests to determine the elastic deformation of balsa wood. They were part of a study on the properties of balsa as an insulation material.

1	西村眞志[illegible]	15	上西 [illegible]	29	杉村伊兵衛	43	加[illegible]正[illegible]
2	Janson, A. J.	16	水志正[illegible]	30	[illegible]	44	[illegible]
3	小[illegible]八郎	17	齋藤省三	31	[illegible]	45	[illegible]文[illegible]
4	今井文平	18	[illegible]三郎	32	丹[illegible]重光	46	[illegible]野[illegible]一
5	[illegible]原[illegible]郎	19	長野・[illegible]寺	33	伊澤[illegible]次郎	47	[illegible]井[illegible]
6	McCormick, E.J.	20	Vilter, E. F.	34	[illegible]山[illegible]	48	[illegible]太郎
7	[illegible]井國太郎	21	Vilter, Emil.	35	[illegible]城敏夫	49	[illegible]太郎
8	Fay, Charles, H.	22	[illegible]武一	36	和合[illegible]郎	50	[illegible]村[illegible]
9	Babbitt, H. E.	23	星野三郎	37	小林正[illegible]	51	[illegible]乙[illegible]
10	北[illegible]重之	24	西原[illegible]三	38	寺[illegible]豐	52	大[illegible]正一
11	Barrow, Edward.	25	[illegible]塚[illegible]一	39	[illegible]山[illegible]	53	[illegible]
12	Carrier, W. H.	26	[illegible]本信一	40	大[illegible]一郎	54	[illegible]野定[illegible]
13	Binnie, W. J. E.	27	木村[illegible]六	41	[illegible]野[illegible]二		
14	柳町政之助	28	[illegible]	42	[illegible]		

The Japanese Society of Domestic and Sanitary Engineers hosted Refrigerating Engineers in 1930 during a visit to the World Engineering Congress.



A true to scale model of a cold storage plant with more than 2,000 individual castings was conceived by an ASRE committee and built by Berthold Audsley in 1931. The model showed the insulation, refrigerating system, elevators, and power plant equipment. The model was loaned to the Chicago Museum of Science and Industry.

To record the progress of refrigerating engineering, the members of ASRE sealed a time capsule on November 29, 1954 on the occasion of the 50th Anniversary of the organization's founding. The capsule received its last paper from Society President A.J. Hess. A.C. Carlton (left) from The Franklin Institute, J.S. Burlew and past ASRE President Edward Simons (right) observe.

Dr. Edgar Ross (left) and T.H. Silary of the Philadelphia Section emplace the time capsule. The year of opening is set for 2004, the 100th Anniversary of ASRE's founding.

April 8, 1955, ASRE held dedication ceremonies at The Franklin Institute in Philadelphia and formally transferred their time capsule to the custodianship of The Institute. Edward Simons, chairman of the Fiftieth Anniversary Committee, delivered the dedicatory statement: "The work here emplaced in record has been accomplished toward the betterment of mankind. Dedication lies with the very doing. We here, and those for whom we stand, hold ourselves ready for the years to come and solemnly pledge ourselves to work truly and well that there may be those who shall give of themselves to the fullness of their talents in the growing of this age." Pictured left to right are Leon Buehler, Jr.; A.J. Hess; H.F. Spoehrer; J.F. Stone; C.S. Leopold; R.C. Jordan; R.C. Cross; M.C. Turpin; Edward Simons and Edward Simons, Jr.

In 1959, three bronze plaques were completed honoring pioneers in the field of refrigeration and refrigerating equipment. The two men individually honored are John Gorrie and Alexander Twining. The third plaque listed 12 additional American pioneers. The plaques now hang at the International Headquarters of ASHRAE in Atlanta.