



ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

LA CROSSE AREA CHAPTER

c/o The Trane Company
3600 Pammel Creek Road
La Crosse, Wisconsin 54601-7599
1992-1993

President

Donald Eppelheimer
The Trane Company
3600 Pammel Creek Road
La Crosse WI 54601-7599
(608) 787-2978
Fax (608) 787-3005

Vice President

Gary Pierce
Mc Loone Metal Graphics
75 Sumner Street
La Crosse WI 54603
(608) 784-1260

Treasurer

Dave Hoffman
WWTC
6th & Vine
La Crosse WI 54601
(608) 785-9277

Secretary

Perry England
The Trane Company
3600 Pammel Creek Road
La Crosse WI 54601-7599
(608) 787-2771
Fax (608) 787-4442

BOARD OF GOVERNORS

Stephen Fedie
HSR Associates
100 Milwaukee
La Crosse WI 54603
(608) 784-1830
Fax (608) 782-5844

Rolf Hanson
The Trane Company
3600 Pammel Creek Road
La Crosse WI 54601-7599
(608) 787-4055
Fax (608) 787-2669

Forrest Moe
Johnson Controls
2720 Commerce Street
La Crosse WI 54603
(608) 781-7600
Fax (608) 781-5350

April 27, 1993

Mr. Harry (Hank) Sauer, Jr., P.E.
Region VI Historian
University of Missouri - Rolla
Rolla, MO 65401

Subject: Gold Ribbon and Log Book of TIME Award
11th Entry - History of a Person

Dear Mr. Sauer,

I am enclosing the La Crosse Area Chapter, 11th entry, for the Gold Ribbon and Log Book of TIME Award. The La Crosse Area Chapter is very proud to submit the History of a Person, Reuben N. Trane, who was a premier member and contributor to ASHRAE.

Thank you.

Very truly yours,

James M. Ritter, P.E.
Chapter Historian
La Crosse Area Chapter

CHAPTER MAY NOT ACT FOR SOCIETY

THE HISTORY OF A PERSON

REUBEN N. TRANE

Reuben N. Trane combined his talents as an engineer, inventor and business executive to develop an idea for improving on the cast iron radiator into a manufacturing enterprise ranking today as one of the world's largest in the fields of air conditioning, heating, ventilating and heat transfer equipment.

By pioneering in many ways, Mr. Trane expanded the small manufacturing company he formed in 1913 into a concern whose products are sold and used in almost every part of the world. Sales of The Trane Company have grown from the \$50,000 of 1913, to more than \$45,000,000 in 1953, and \$1.9 billion in 1992.

Much of this growth was credited to the way Reuben Trane built his company to thrive and endure by organizing a strong corps of young engineers as its cornerstone.

Realizing that vigorous engineering initiative would produce a constant flow of new and improved products, Mr. Trane often voiced this business philosophy:

"If the choice were mine, I'd rather lose my business -- but keep my engineers together."

This philosophy of "human engineering" became firmly rooted as a tradition of The Trane Company, which he headed as president from 1916 to 1951 and served as chairman of the board from 1951 to January, 1954.

And when he retired from active participation in company affairs, he could be gratified that his engineering associates were continuing to expand the business and plan for the future on the same principle.

The son of James A. and Mary (nee Miller) Trane, Reuben Trane was born in La Crosse, September 13, 1886, the year that his father opened a plumbing and heating shop on Pearl Street.

He worked for his father as a plumber's helper for a year after graduation from La Crosse public schools in 1905, earning money to help obtain an engineering education at the University of Wisconsin.

Entering the university in 1906, he became active in extra-curricular affairs, rowing on the freshman crew which won the two-mile freshman race at Poughkeepsie; rowing three years on the varsity and captaining the crew as a senior; and with Jack Wilkes and Sam Kerr, organizing the Student Union to provide a campus community center. From this beginning, the Wisconsin Memorial Union developed into a model of its kind -- "the living room of the campus," with facilities for dining, lounging, meetings, banquets, dances; a library, art galleries, two theaters and other recreational facilities that even

include craft workshops and photographic dark rooms. All students automatically become members of the Union upon registration.

Upon graduation with a Bachelor of Science Degree in Mechanical Engineering in 1910, Reuben Trane first worked three years as a sales engineer with a Milwaukee machine tools firm, then returned to La Crosse in 1913, and with his father, James, incorporated The Trane Company to manufacture steam valves and traps that James A. Trane had invented in connection with a vapor heating system.

Three years later, Reuben Trane assumed the Company's presidency, dividing his time between devising new products, marketing them, and supervising the business as a whole.

Although World War I cut production and Reuben Trane himself was devoting much of his time to war projects, including the Liberty Loan campaigns, he kept the infant company prepared for the future. By 1919, he saw enough business potential ahead to justify erecting a building at Second Street and Cameron Avenue. He had put up three more additions by 1925 when the payroll neared the 100 mark.

This point was to become a milestone, not only in the history of the company, but in the records of the entire heating and ventilating industry.

For it was about this time that Mr. Trane conceived the basic idea for his convector, creating the modern successor to the old cast iron radiator.

As an engineer, he had been dissatisfied with the cast iron radiator from standpoints of heat transference and weight. As an imaginative businessman, he sensed the sales impact of a product that would not only be more efficient, but lighter, quieter, more attractive. As a result, he developed the convector -- which he first called a "heat cabinet." It consisted of a cabinet housing a fin-and-tube coil -- thin aluminum or copper fins attached to thin copper tubing within which circulated the heating medium, steam or hot water. The fins simply speeded up the dissipation of the heat.

The convector was trimmer, neater, lighter, quieter, more efficient than the old radiator. Mr. Trane tried to sell the rights to large radiator manufacturers but they turned him down.

So in 1926, he announced the convector publicly and began manufacturing it himself, meanwhile developing still another product -- what he called a "unit" heater -- which also utilized the fin-and-tube coil as its heart, but which had an electrically driven fan to increase the amount of heated air the unit could deliver.

Making the small company into a national factor in the industry, the convector and unit heater were just two of many pioneering ideas which thereafter stimulated its remarkable growth.

By 1930, sales demand for Trane products justified erection of a new factory of more than 43,000 square feet of floor space at Sixteenth and Bennett Streets in La Crosse, the The Trane Company was really under way.

Even in the face of the depression of the 1930's, Mr. Trane took his company into another new era -- the era of air conditioning which today constitutes the core of the company's product line.

Mr. Trane had found that his fin-and-tube coil would work just as effectively in extracting heat from the air as it did in transferring heat to the air.

As a result, the "coil," which made the convector and the unit heater possible, became the core of new Trane air conditioners which -- despite the depression -- were introduced in 1932 and 1933.

Around these air conditioners and their successors, The Trane Company evolved whole new systems of air conditioning which, with modifications suited to the installations, are still widely used not only in all types of buildings, but also in ships, airplanes and wherever conditioned air is an aid to comfort or production.

Mr. Trane also put his company into the manufacture of both reciprocating and centrifugal refrigeration compressors, producing the first basic change in centrifugal compressors since they were first introduced in this country.

In 1938, the company introduced the first centrifugal compressor with a hermetically sealed motor, and by the time Mr. Trane was moving up from the presidency to the chairmanship of the board in 1951, his company had incorporated further engineering knowledge gained in the Trane laboratories into creation of a still more efficient centrifugal -- the CenTraVac -- which starts, stops and runs unattended, automatically adjusting its use of power almost precisely to the cooling requirements. These were large capacity machines, up to several hundred tons of cooling capacity, designed to supply chilled water for the air conditioning of large buildings.

Under Mr. Trane's leadership, the company's pioneering activity embraced many fields of industry and contributed to national defense.

During World War II, for example, there was a demand for a heat exchanger that was more compact and lighter in weight to cool air from aircraft superchargers before being fed into the carburetor.

Thin sheets of aluminum were an obvious answer to the lightness problem -- but how to join these sheets (only 6/1000 of an inch thick) in fabricating an exchanger was something more perplexing.

Mr. Trane was excited by the challenge and worked along with his engineers, often sitting at a drawing board hours at a time while he worked out his own ideas for solving problems.

First on a laboratory scale and then in a pilot plant, the Trane engineers developed a method of brazing the thin sheets -- something that apparently no one had ever done commercially before.

It resulted in an exchanger doing the same work as conventional equipment in one-fourth the space, with one-third the weight, at half the cost.

Today, exchangers manufactured on the same principles are used in a variety of industries including chemicals and petroleum.

Other war projects included development and production of the first all-aluminum aircraft radiator for liquid cooled engines; and equipment to help prevent ice formation on wings, cool plane cabins, distill sea water for drinking, along with regular heating, cooling and ventilating equipment for ships and war plants.

With the end of the war, Mr. Trane set out on another pioneering venture, mechanical refrigeration of railroad freight cars.

Foreseeing a great potential for Trane equipment in this field, largely due to the rise in frozen foods as a new industry, he worked personally with the president of the Santa Fe Railroad in the early planning stages on an experimental mechanically refrigerated car, and followed the project closely thereafter.

By the mid-1950's, hundreds of mechanically refrigerated freight cars were in service, carrying frozen foods and other perishables, with more cars on order.

Mr. Trane also put his company extensively into other phases of transportation, including air conditioning of passenger cars and buses.

Even atomic power had a place in the calculations of the company. The firm moved into this field by providing heat exchangers essential to harnessing atomic energy for power, and provided both comfort and process equipment for the atomic plant at Hanford, Washington, along with comfort equipment for Oak Ridge, Tennessee. It also worked on classified projects for the Atomic Energy Commission (AEC). When the new Trane Research and Testing Laboratory -- a million-dollar "House of Weather Magic" -- was dedicated in May, 1954, the headline speaker was President Eisenhower's then top military adviser on atomic energy, the Honorable Robert LeBaron, assistant to the Secretary of Defense and Chairman of the Military Liaison Committee to the AEC.

At that time, there were large displays in the laboratory picturing the principles of harnessing atomic energy for powering airplanes and heating buildings -- displays suggestive of a possible Trane role in the new world of the atom.

Keeping pace with the company's steady expansion into so many fields has been its growth of employment and physical facilities.

From the half dozen employees Reuben Trane had when he started the company, the payroll has grown to 2500 in La Crosse, where The Trane Company is the city's largest employer. Trane employs more than 14,000 in 14 U.S. locations, as well as Canada and France. Trane also has joint ventures in other parts of the world.

Reuben Trane's policies set his company apart from others in its fields by staying strictly in manufacturing.

The firm maintains a world-wide sales force of graduate engineers who sell to contractors, large industries and wholesalers, and work with consulting engineers and architects. Other distinguishing factors include the company's strong emphasis on engineering as the basis for company development.

As long ago as 1925, Mr. Trane inaugurated a program of student training that reflected his long-range planning for the company.

Under this program, which continues to be in operation today, the firm seeks out high ranking graduates of the nation's leading engineering schools for training within the company.

One of the students in the first 1925 class was a young graduate of Iowa State College at Ames, Donald C. Minard -- who was destined to succeed Mr. Trane as president of The Trane Company.

Interested deeply in education, Mr. Trane also began endowment of post-graduate engineering scholarships at the University of Wisconsin, a program the company has since been extending to other engineering universities.

Mr. Trane's inventiveness brought him 27 patents in the air conditioning and heating fields. His contributions to the engineering profession were underscored when The

American Society of Heating and Ventilating Engineers honored him with a lifetime membership and when, in 1951, he was cited in a ceremony by the University of Wisconsin.

He was a charter member of the University of Wisconsin Foundation, serving as a director. Many of his acts of service were personal and confidential.

But he aided the establishment and beautification of various La Crosse park facilities, and he was active in many fund-raising drives -- notably the financing of the La Crosse Home for Children.

Other activities included the presidency of the La Crosse Chamber of Commerce, a trusteeship of the YMCA, memberships in Pi Tau Sigma, honorary mechanical engineering fraternity; Badger Lodge 345 of the Masonic Order; La Crosse Country Club; University Club (Chicago); and Los Angeles Country Club.

With all his business and outside activities, he still found time for favorite hobbies, including golf -- he shot in the mid-80's and once scored an ace on the 243-yard 12th hole at the La Crosse Country Club -- fishing, and yachting.

Until his health prevented it, Mr. Trane was always eager to join the company picnics; he enjoyed the people who worked with him, and even when the company had grown beyond his earlier dreams, he could still call hundreds by their first names. He had worked side by side with many of them, for Mr. Trane could operate any of the machines in his factories and occasionally did so in order to demonstrate a point.

Mr. Trane was married May 13, 1912 to Helen Katherine Hood, sister of Frank G. Hood, who succeeded him as Chairman of the Board. They had three children.

Reuben Trane died September 5, 1954. In keeping with Reuben Trane's vision, The Trane Company continues to expand its product lines and continues to grow. Reuben saw his company become a leading producer of equipment for the larger engineered type of air conditioning system. The Trane name continues to become more familiar to more people in more places every day.

Respectfully submitted,



James M. Ritter, P.E.

Chapter Historian

La Crosse Area Chapter

Trane Named To Receive Citation From University

Reuben N. Trane, president of The Trane Co. of La Crosse, will be one of five engineers and industrialists to be presented distinguished service citations by the University of Wisconsin on May 4.

Announcement of Trane's selection was made Saturday by the university's board of regents. The presentation will be at the annual engineers' day dinner to be held in Madison.

Others selected for citations were: Oliver Storey, Chicago; Grover Neff, Madison; Edwin Seeger, Milwaukee; and Clarence H. Lorig, Columbus, O.

Trane, Storey and Lorig are graduates of the university's col-



REUBEN N. TRANE

lege of engineering. The regents said the accomplishments and leadership in their fields by the five men prompted the awards.

Born In La Crosse

Trane was born in La Crosse September 13, 1886, the only son of James A. Trane and Mary Miller Trane. James A. Trane had emigrated from Norway, locating in La Crosse where he learned and followed his trade as steam fitter, later establishing his own shop.

It was in 1905 that Trane was graduated from high school after attending the public school in La Crosse. Upon graduation he went to work for his father as a plumber's helper in order to secure funds to continue his education.

After a year of such employment he entered the University of Wisconsin in 1906. Because of his limited funds he earned his room and board by waiting on table and tending furnace fire.

Despite the fact that he had to earn his way through school, Trane still found time for extra curricular activities. One of his early interests was the crew. In

UW

(Continued from Page 1)

his first year he rowed in No. 7 position on the freshman crew, which won the freshman two-mile race at Poughkeepsie in 1907, and followed this with three years on the varsity, serving as captain in his last year. He is one of the few Wisconsin crewmen who participated in four Poughkeepsie races—one as a freshman and three as a varsity man.

With Jack Wilkes and Sam Kerr, he organized the Student union. Trane was the first treasurer at its beginning on the main floor of the YMCA. As treasurer he saw to it that the pool tables and candy department showed a profit. He also became a member of Pi Tau Sigma, honorary mechanical engineering fraternity.

He was graduated from the university in 1910 with a bachelor of science degree in mechanical engineering. Immediately following graduation he was employed by a machine tool manufacturer in Milwaukee.

In 1912 he was married to Helen Hood of Madison and returned to La Crosse. There, with his father he organized The Trane Co. Principal assets of the small company were the engineering training Trane had received at the university, plus the determination to make the little organization grow. During its early years the infant company specialized in manufacturing and distributing valves, traps and water circulators for steam heating systems. Sales for the first year were about \$13,000.

The company's spectacular growth followed Trane's development of the first non-ferrous convector, which was announced in 1926. The convector has largely supplanted old style cast-iron radiators in the heating of office buildings, hotels, apartment buildings and large homes.

Revolutionary Developments

The development of non-ferrous extended surface heat transfer coils by Trane followed in

short order and contributed to revolutionary developments in the air conditioning industry. These coils for both heating and cooling have become standard components of most air conditioning systems and units.

Beginning from scratch, Trane in 38 years has built The Trane Co. to its present position. Not only is it one of the larger industries in western Wisconsin but it is an acknowledged leader in the manufacture of heating, cooling, ventilating and air conditioning equipment. Sales totaled approximately \$28,000,000 in 1950.

Many of the engineers in the Trane organization are graduates of the Trane student engineering class, a training course set up by Trane in 1925. Each year outstanding engineering graduates are selected to receive a year-long training in advanced heating and air conditioning practices as well as Trane methods. Trane continues to participate in these post-graduate classes.

Trane has made many important contributions to the industry. In addition to the development of the convector, he holds in his own name 27 patents for improvements in heating, ventilating and air conditioning, together with numerous applications.

Perfects Intercooler

During the last war he devoted his energies to the development and manufacture of an intercooler for high altitude airplanes. One of the difficulties encountered was the welding of aluminum sheets which apparently no one in the country knew how to do commercially.

This problem was solved so successfully that not only was an efficient intercooler produced but this conception of light weight heat exchange surface permitted the development of a whole new segment in the Trane business.

He is a member of the American society of Heating and Ventilating Engineers.

In addition to the development of The Trane Co., Trane always has been active in community activities. He has served as president of the La Crosse Chamber of Commerce and trustee of the La Crosse YMCA. He has taken part in many fund raising drives, most notable of which has been that for the La Crosse Home for Children.

He has always been interested in the University of Wisconsin and its work, especially in the college of engineering. He is a charter member and director of the University of Wisconsin foundation. Through his efforts, The Trane Co. authorizes two scholarships for graduate engineering students in heating, ventilating and air conditioning.

THE INSTITUTION OF

Heating & Ventilating Engineers.

(INCORPORATED)

This is to Certify that Reuben N. Trane.

is a Member of the Institution of
Heating & Ventilating Engineers (Incorporated).

Given under the Common Seal this 6 day of February, 1923.

John M. Weston President.

Henry G. Ford Vice-President.

Joseph Forbush Member of the Council.

W. J. Williams Secretary.