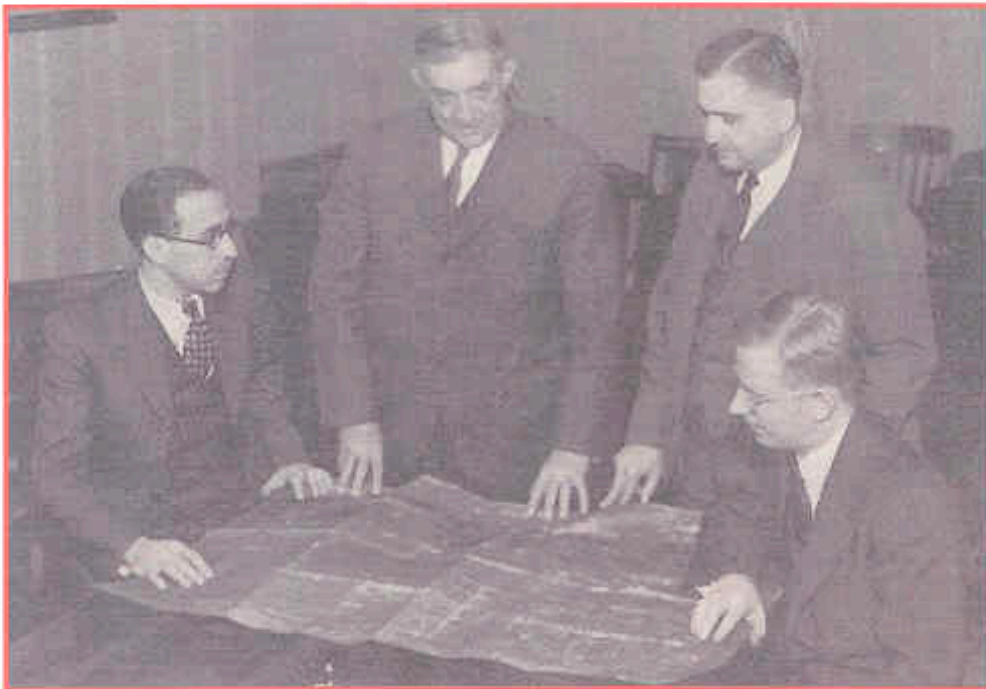


# *Willis Haviland Carrier*

## *Father of Air Conditioning*

**VOLUME-1**  
**Willis H Carrier: The Man and His Message**



### *1.6 The Mediator - Mergers and the Diverging Pattern of Business*

CARRIER - THE MAN AND HIS MESSAGE

CHAPTER SIX

Carrier - the Mediator

It is always interesting to examine recorded events over a period of years and note how a certain year seems decisive. In the case of Carrier, the year 1901 was decisive in that he started with Buffalo Forge and began his first thoughts on Air Conditioning. The climax of his work on the Psychrometric Formulae was in 1911 while 1922 show the conclusion of his efforts to succeed with the manufacture of a centrifugal refrigeration compressor.

Recognition of his contribution to Industry certainly came in 1930 when the Chief became Chairman of the committee on heat transmission of the Senate of the Department of Mechanical Engineers of Columbia University. By 1931 he was President of the American Society of Heating and Ventilating Engineers and in that same year, he was awarded the John Scott medal by the Directors of City Trust Philadelphia. A year later, the A.S.H.V.E. awarded him the F. Paul Anderson Gold Medal.

But, as a decisive year in the history of both Carrier and the Corporation, which he founded, the year 1930 seems to be the watershed. In this year 1930 Carrier purchased a third plant in Allan town Pennsylvania making a manufacturing floor area totalling 231,550 square feet (nil in 1921, five acres in 1929).

This additional plant in Allentown, Pennsylvania had provided scope for investigating methods by which air conditioning could avoid the draughts associated with glass areas and Carrier was busy checking the effect of placing the air supply at window sill level and by using ejector nozzles (an advance from Dr. Klein's patent) produce good air movement by local induction. The next few years would encompass the gradual perfection of the weathermaster system. Also, early in 1930, after running tests on coach No. 5275 the B & O ordered an air conditioning and refrigerating system for the diner, "Martha Washington" of "The Columbian" a crack train operating between New York and Washington. In April of that year, the Chief Engineer of Carrier Engineering Company Limited was returning to London with the plans for the first full Air Conditioning installation for a ship, the M/V "Victoria" of the Lloyd Triestino Line.

Those three projects - Office Air Conditioning, Train Air Conditioning and Ship Air Conditioning - would have been sufficient to mark 1930 as a decisive year but another happening marked it even more.

In 1930, Carrier Engineering Corporation merged with Brunswick Kroeschell Company and York Heating and Ventilating Company to form Carrier Corporation.

This was a classic case of the merger by mutual agreement that often occurred in the original growth of some of the largest Corporations and should not be confused

with the mergers and take-overs that formed a part of the business scene of the fifties and sixties.

The merger provided 5 plants located in 3 Cities in 2 States.

The three businesses had similarity without competition and in many ways were complementary. Carrier Engineering had grown out of the design engineering capability of Carrier. Its initial successes and its desire for completeness of execution from design had led it into manufacture of particular items not readily available on the open market, such as the centrifugal refrigeration machine, but its expertise was essentially that of a design contractor. Brunswick Kroeschell, growing out of two boiler companies, was in mechanical refrigeration production, but were appreciative of the fact that ammonia and carbon dioxide compressors were on the way out when compared with centrifugal machines for air conditioning. By merging there were possibilities of increased sales especially in the marine and export fields. Carrier and Lyle wanted to extend the merger to York Heating and Ventilating, who built and sold unit heaters, who had a considerable merchandising organisation and who had made some progress in developing a room-cooling unit. Carrier knew that the eventual market for room-cooling units would require the combined expertise of the three companies in the merger to have any chance of success.

The heads of the three companies, Carrier and Lyle of Carrier Engineering Corporation, Sidney B. Carpende, President of Brunswick-Kroeschell and Thornton Lewis, President of York Heating and Ventilating, were close friends. Carpende had graduated from Cornell University some six years after Carrier. They and Lyle had met frequently at engineering society meetings and often played golf together, especially at the spring meetings of the Refrigerating Manufacturers Association. Thornton Lewis, like Lyle, was a Kentuckian and a graduate of the University of Kentucky. He had worked with Carrier in the engineering department of Buffalo Forge Company in 1906-7. By 1930 all these men were successful in their own right. Now they considered they would continue to be successful in a merged effort.

As usual when the heads of companies are in agreement everything moved quickly and by December 11, 1930, Carrier Corporation as an Organisation was in being. Willis Carrier was Chairman of the Board; Irvine Lyle, President; Thornton Lewis, executive Vice-President. Carrier Engineering Corporation became a subsidiary company with E.T. Murphy, President and E. T. Lyle and A. E. Stacey, vice-presidents. Carrier-Brunswick International Inc. merging the refrigerating capabilities of Carrier Engineering Corporation and

Brunswick-Kroeschell had Sidney B. Carpende~~r~~ as president. The legal advisor of Carrier Engineering Corporation from its earliest birth, Charles J. Staples, became secretary and general counsel of Carrier Corporation.

In spite of the logical commercial background to the merger, it was not without its emotional reactions. Out in the field some engineers startled by the unexpected news, wondered just how this would affect them personally and then how the incorporation of companies like York Heating and Ventilating and Brunswick-Kroeschell would affect Carrier's drive for excellence and Carrier's belief that big must not be a substitute for great. However, 1930 was feeling the depression, following the market collapse of 1929, which was to become a World depression and produce massive unemployment in many countries. Carrier Engineering Corporation had not felt the immediate pressures of 1929 and early 1930 but by the time the merger had produced Carrier Corporation, the depressive effects had caught up with all three original companies that formed the merger.

So that not only were there the emotional subjective pressures that any merger produces but these were coupled with the pressures produced by falling business and loss of profits. Again, out in the field, the news from headquarters was startling and not well explained. Some of the best known engineers that had been at the core of Carrier Engineering Corporation had left the Corporation and were stated to have joined together to start up another company of their own. The names were second echelon with only one from the original founders but were all thought to be part and parcel of the Carrier team and particularly close



colleagues of the Chiefs, especially on the engineering side, but covering all facets, including sales.

Undoubtedly it was inevitable and the reasons need not be investigated in detail. The Chief was deeply concerned. He was personally involved with all the individuals. They were to a large degree his boys. There is no doubt that he explored the reasons with them. In one case only was he really shaken when the reasons did not seem entirely logical to him and he failed to change the decision. It was his attitude that was the guide-line for all the engineers. If the Chief had gone along with it, it must be okay. His mediation was unspoken. He gave credence to the whole affair by his very inarticulateness. The regret that some good friends had come to the parting of the ways remained on both sides but, of course, the parting was a fact and could not be forgotten. The Chief's attitude can be illustrated by an event that occurred many years later. It is 1946. Carrier is in his seventieth year and the Corporation is bracing itself for the reorganisation necessary after the War years. The Chief Engineer of the International Division decides to leave the Corporation after having been with the Corporation nearly twenty years. He is asked by Carrier to come down to his office and the following conversation ensues:

"Do we treat you well?"

"Yes"

"Salary Okay"

"Yes"

"Does your work give you satisfaction?"

"Yes"

"Then, why do you want to leave?"

"Because I want to run my own show"

Carrier meditated for a while, then bent forward and, with a pat on the shoulder, said "Okay, Bless you, my boy !" Maybe the words would have been different in those earlier years of the thirties but the sentiment, the understanding, the belief in men as individuals would have been the same. Anyway, the fact remains that the pressures of the merger and the coincidence of the depression did not dampen Carrier's enthusiasm as he mediated between the rival claims of manufacturing and engineering while at the same time progressing his long felt need for unitary air conditioning and less bulky equipment for multi-storey multi-office air conditioning.

There had been a number of attempts at unitary air conditioning. Early massively built units housing various forms of services to enable water to be evaporated, as a means of evaporative cooling were never more than one off jobs as they seldom hit the mass market. After all, for hundreds of years people in India had thrown water against khas ka *Lattis* (reed mats) to achieve evaporation cooling; for centuries snow and ice had been used as refrigeration; and movement of air to give a sensation of comfort was as old as Chinese and Japanese fans. Carrier had brought to the art the insistence that Air Conditioning meant the control of the humidity of air by either increasing or decreasing its moisture content. Added to the control of humidity are the control of temperature by either heating or cooling the air, the purification of the air by washing or filtering the air, and the control of air motion and ventilation. Now Carrier was insistent that air conditioning self contained units should cover all these control requirements.



It was no easy task and was to have profound effect on the Carrier Corporation. It was to require all the Chief's powers of persuasion and mediation to keep the lines of communication open between those who considered that the engineering principles were sacred and those who believed they could be bent in the interests of marketing and sales.

During these early years of the thirties, Carrier's overseas partners in Europe had not moved in the same direction as the merger had taken Carrier Corporation. Carrier Engineering Company in London, Carrier Continentale in Paris and Lufttechnische Gesellschaft in Stuttgart continued through the depression to maintain their design contracting capability and avoid any major investment in manufacture. Their response to the need for augmenting the income from air conditioning during a period when money was scarce was to diversify into the thermal engineering fields of high pressure hot water and the application of paint to automobiles. These diversities were to prove obstacles to the continued partnership but the first break was on a different issue.