

Carrier in Charge

Keeping Consumers Cool, Heating Up the Industry

By Matt L. Ottinger

Carrier's wall of patents (the company holds 276) serves as an ongoing reminder of the company's ingenuity.



Historical Milestones

- 1902 Willis Carrier invents the world's first mechanical air conditioner.
- 1906 U.S. patent issued for "Apparatus for Treating Air."
- 1915 Carrier Engineering Corp. is founded in New York.
- 1922 Carrier develops a new coolant and a centrifugal refrigerating machine that enables the cooling of public spaces, changing the face of urban architecture.
- 1939 Carrier invents a system for air conditioning skyscrapers.
- 1965 Carrier installs ground-based environmental control systems for the Apollo-Saturn V moon program.
- 1980 UTC acquires Carrier, the world's largest manufacturer of air conditioning and refrigeration equipment.
- 1986 Carrier establishes first of several joint ventures in China.
- 1996 Carrier introduces its first product line of high efficiency residential air conditioners and heat pumps using the environmentally sound, non-ozone-depleting Puron® refrigerant.
- 2006 Carrier pushes the performance of some Infinity models to 21 SEER (Seasonal Energy Efficiency Ratio), saving consumers more than half the energy some previous products required

Not many businesses can claim their products are used internationally, gracing some of the globe's most hallowed facilities such as the Sistine Chapel and George Washington's Mount Vernon estate, as well as millions of residential homes. Yet Carrier – a leader in providing heating, ventilation, air conditioning and refrigeration (HVACR) systems and related equipment – proudly stakes that claim.

Of Carrier's 43,000 employees, 2,400 are employed at two Indiana facilities in Indianapolis (1,600) and Huntington (800). A subsidiary of United Technologies Corporation (UTC), Carrier boasts a network of research and development centers, as well as 71 manufacturing facilities and 18 design centers around the world. Its family of distributors spans 170 countries and six continents, grossing total revenues of \$14.6 billion in 2007. Its Indianapolis facility alone can produce 7,500 units daily on seven product lines (one every five seconds).

The company was initially founded in 1902 when Willis Carrier invented the world's first mechanical air conditioner, followed by the founding of the New York-based (now Connecticut-based) company in 1915. Carrier himself would go on to be named as one of *Time* magazine's most influential people of the 20th century.

Taking care of the environment

According to the company, Carrier has helped its customers reduce energy usage by 54% between 1997 and 2006. It has also helped to decrease air emissions by 72% since 1999.

"For us, being conscious of the environment is not a fad or a trend, it's a part of our DNA," says Tom Quigley, vice president of marketing and residential systems.

In 2007, Carrier introduced the Hybrid Heat system that utilizes intuitive control for both gas and electric heating to create technology that automatically selects the most cost efficient fuel source at that moment (either the heat pump or gas furnace).

Senior Product Manager Bob Swilik explains that in 2010, refrigeration units will be switching (by federal mandate via the 1990 Clean Air Act) from Freon (R-22, which has been proven to deplete the ozone) to chlorine-free Puron (R-410A), and notes his company was the first to use R-410A in indoor cooling systems. He also explains Carrier has been gearing its products toward the 2010 switchover date for some time, and that the company develops five-year product plans in order to stay ahead of the marketplace in terms of technology.

"We develop products five years out so we can leapfrog our competition and bring higher efficiency for our consumers," Swilik surmises.

Personal health is another factor that motivates Carrier's technology. Quigley explains its "capture & kill" air purifier may sound harsh by description, but it's quite the opposite for consumers as the technology traps and eliminates harmful airborne viruses from the air in the home.

"With environmental factors and allergies becoming a major concern in the household, this system kills airborne viruses including the common cold, flu, bird flu and others," he says.



All Carrier equipment is weather-tested in a corrosion testing chamber (left) with saltwater to ensure the highest reliability and quality. This trade certified sound room (center) was built in the 1970s. It has its own foundation isolated from the rest of the building. The room, known as a reverberation room, is used to generate sound ratings for outdoor units. The shaker table (right) simulates transport of equipment to assist in packaging design and development.

Ahead of the curve

Touting ingenuity as a breeder of success, Carrier holds 276 patents, with 21 of those issued last year. In fact, Swilik holds 11 of his own.

Carrier's engineers use efficiency as the key objective – a concept that becomes more challenging as its technology becomes more precise.

“We used to be able to make 10% leaps in efficiency at a time,” Swilik surmises. “Now, we’ve made such great strides that we’re at 96% and looking for that little bit extra.”

Safety is also a key concern at Carrier, as its local facility has seen 14 million man hours since the last lost-time safety accident. Hourly workers can also be financially rewarded for following best safety practices, earning up to \$250 a year in incentives.

All told, Carrier currently faces many of the same trials as most companies, with Quigley adding that the state of the housing market can be a challenge for the business.

“The general slowdown of the economy, lower consumer confidence and the downturn in residential new construction are all challenges for us,” he says. “There are fewer than 1 million new homes anticipated to be built nationally, and that’s the lowest housing estimate since World War II. This hurts not just HVAC companies, but anyone in the do-it-yourself business.”

However, Quigley remains optimistic regarding the steady increase in home remodeling.

“A bright spot for us has been add-on replacements, which keep increasing every year,” he offers.

Quigley also contends that recruiting an educated workforce is a challenge for dealers, although the company has set up career centers in hopes of helping its dealers find qualified candidates. It has also been a goal of Carrier's to have the most educated workforce possible. Through the Employee Scholar Program created in the mid-1990s by then president and current chairman and

CEO George David, the company reimburses its full-time employees who pursue higher education at accredited institutions. Swilik adds that he earned a graduate degree through the program, which also allows enrolled staff to take three hours of paid study time off per week.

Carrier's Indiana home

Carrier North America residential division, which has called Indiana home since its Bryant factory was built in 1967, lauds the Hoosier state for its various amenities.

“Indiana is great because of its central location, which is ideal for shipping,” Quigley explains. “There’s also a strong local employee base; the universities in the area provide a great talent level.”

Perhaps most paramount, Quigley also believes Indiana's quality of life is a tremendous asset for the state and its businesses and helps in nationally recruiting engineers.

“I think (potential employees) are surprised when they research this area to find out all that’s offered socially, professionally and academically,” he contends.

Carrier also repays its communities by giving back. As a longtime partner with Habitat for Humanity, the company has donated more than \$3 million in equipment and cash and 26,000 man hours to help build more than 100 homes on three continents. Locally, the company used the nationally televised 2007 Indianapolis Colts season opener against the New Orleans Saints as a platform to donate a generator to a New Orleans firehouse damaged by Hurricane Katrina.

All things considered, Quigley touts Carrier as a hidden gem within Indiana.

“I’d say we’re one of the best kept secrets in town in terms of our success. ... We think we bring value to our consumers and to the state,” he asserts.



A Carrier employee places heat exchangers into a furnace unit. Heat exchangers extract heat from the ignited natural gas flowing through them to warm the home.

INFORMATION LINK

Resource: Carrier at www.carrier.com