

History of the microwave oven



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A Brief History of the Microwave Oven

Like many of today's great inventions, the microwave oven was a by-product of another technology. It was during a radar-related research project around 1946 that Dr. Percy Spencer, a self-taught engineer with the Raytheon Corporation, noticed something very unusual. He was testing a new vacuum tube called a magnetron, when he discovered that a candy bar in his pocket had melted. This intrigued Dr. Spencer, so he tried another experiment. This time he placed some popcorn kernels near the tube and, perhaps a little farther away, he watched with an inventive sparkle in his eye as the popcorn sputtered, cracked and popped all over his lab.

The next morning, Scientist Spencer decided to put the magnetron tube near an egg. Spencer was joined by a curious colleague, and they both watched as the egg began to tremor and quake. The rapid temperature rise within the egg was causing tremendous internal pressure. Evidently the curious colleague moved in for a closer look just as the egg exploded and splattered hot yolk all over his amazed face. The face of Spencer lit up with a logical scientific conclusion: the melted candy bar, the popcorn, and now the exploding egg were all attributable to exposure to low-density microwave energy. Thus, if an egg can be cooked that quickly, why not other foods? Experimentation began...

Dr. Spencer fashioned a metal box with an opening into which he fed microwave power. Energy entering the box was unable to escape, thereby creating a higher density electromagnetic field. When food was placed in the box and microwave energy fed in, the temperature of the food rose very rapidly. Dr. Spencer had invented what was to revolutionize cooking, and form the basis of a multimillion dollar industry, the microwave oven.

A Bit of Trivia: The "Speedie Weenie" Project

In the spring of 1946, Percy Spencer and an associate, P. R. Hanson (Roly Hanson), were
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working on a secret project they called "the Speedy Weenie". Muriel Withrow remembers the project well. She recalls, "The 'Speedy Weenie' Project was the nickname Mr. Spencer, my boss, Roly Hanson, gave to their secret project, the microwave [oven]" "Speedie meaning 'a quick hot dog!'" (Our thanks to Mrs. Withrow for sharing this little known

[ClickHERE](#): 1958 Issue of Readers Digest article about Dr. Percy Spencer

[ClickHERE](#): Wikiverse - A World of Knowledge. Article about Percy Spencer with additional links.

Nearly 6 Feet Tall, Weighing 750 Pounds

Engineers went to work on Spencer's hot new idea, developing and refining it for practical use. By late 1946, the Raytheon Company had filed a patent proposing that microwaves be used to cook food. An oven that heated food using microwave energy was then placed in a Boston restaurant for testing. At last, in 1947, the first commercial microwave oven hit the market. These primitive units were gigantic and enormously expensive, standing 5 feet tall, weighing over 750 pounds, and costing about \$5000 each. The magnetron tube had to be water-cooled, so plumbing installations were also required.

Initial Reactions Were Unfavorable

Not surprisingly, many were highly reluctant about these first units, and so they found only limited acceptance. Initial sales were disappointing... but not for long. Further improvements and refinements soon produced a more reliable and lightweight oven that was not only less expensive, but, with the development of a new air-cooled magnetron, there was no longer any need for a plumber.

The microwave oven had reached a new level of acceptance, particularly with regard to certain industrial applications. By having a microwave oven available, restaurants and vending companies could now keep products refrigerator-fresh up to the point of service, then heat to order. The result? Fresher food, less waste, and money saved.

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New and Unusual Applications

As the food industry began to recognize the potential and versatility of the microwave oven, its usefulness was put to new tests. Industries began using microwaves to dry potato chips and roast coffee beans and peanuts. Meats could be defrosted, precooked and tempered. Even the shucking of oysters was made easier by microwaves. Other industries found the diverse applications of microwave heating quite advantageous. In time, microwaves were being used to dry cork, ceramics, paper, leather, tobacco, textiles, pencils, flowers, wet books and match heads. The microwave oven had become a necessity in the commercial market and the possibilities seemed endless.

The First "Radarange"

In 1947, Raytheon demonstrated the world's first microwave oven and called it a "Radarange," the winning name in an employee contest. Housed in refrigerator-sized cabinets, the first microwave ovens cost between \$2,000 and \$3,000. Sometime between 1952-55, Tappan introduced the first home model priced at \$1295. In 1965 Raytheon acquired Amana Refrigeration. Two years later, the first countertop, domestic oven was introduced. It was a 100-volt microwave oven, which cost just under \$500 and was smaller, safer and more reliable than previous models.

By 1975 Sales of Microwave Ovens Exceeded that of Gas Ranges

Technological advances and further developments led to a microwave oven that was polished and priced for the consumer kitchen. However, there were many myths and fears surrounding these mysterious new electronic "radar ranges." By the seventies, more and more people were finding the benefits

of microwave cooking to outweigh the possible risks, and none of them were dying of radiation poisoning, going blind, sterile, or becoming impotent (at least not from using microwave ovens). As fears faded, a swelling wave of acceptance began filtering into the kitchens of America and other countries. Myths were melting away, and doubt was turning into demand.

By 1975, sales of microwave ovens would, for the first time, exceed that of gas ranges. The following year, a reported 17% of all homes in Japan were doing their cooking by microwaves, compared with 4% of the homes in the United States the same year. Before long, though, microwave ovens were adorning the kitchens in over nine million homes, or about 14%, of all the homes in the United States. In 1976, the microwave oven became a more commonly owned kitchen appliance than the dishwasher, reaching nearly 60%, or about 52 million U. S. households. America's cooking habits were being drastically changed by the time and energy-saving convenience of the microwave oven. Once considered a luxury, the microwave oven had developed into a practical necessity for a fast-paced world.

An expanding market has produced a style to suit every taste; a size, shape, and color to fit any kitchen, and a price to please almost every pocketbook. Options and features, such as the addition of convection heat, probe and sensor cooking, meet the needs of virtually every cooking, heating or drying application. Today, the magic of microwave cooking has radiated around the globe, becoming an international phenomenon.

Inventor Spencer

Doctor Spencer continued at Raytheon as a senior consultant until he died at the age of 76. At the time of his death, Dr. Spencer held 150 patents and was considered one of the world's leading experts in the field of microwave energy, despite his lack of a high school education.

On September 18, 1999, Dr. Percy LaBaron Spencer was inducted into the National Inventors Hall of Fame and took his place in history alongside such great inventors as Thomas Edison, the Wright Brothers and George Washington Carver.