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Microwave oven  
Lakewood  
Conferences

## [History of the Microwave Oven](#)

### *The evolution of an alternative way of cooking*

The microwave oven is considered to be one of the most brilliant inventions of the human race and you can have numerous people testify for that. Not only is it used to heat food, it can also be used for cooking, baking, thawing and even boiling water. Nowadays, there are few households lacking this multi-purpose appliance. However the microwave oven had to pass through various phases in order to reach the status it has today.

#### Invention of the microwave oven

Like many great products in history, the microwave oven is also a product of past technologies. The microwave oven did not come about as a result of someone trying to find a better, faster way to cook. During World War II, two scientists invented the magnetron, a tube that produces microwaves. By installing magnetrons in Britain's radar system, the Allies used microwaves in order to spot Nazi warplanes on their way to bomb the British Isles.

By accident, several years later, it was discovered that microwaves also cook food. 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 type of magnetron when he discovered that the 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 standing 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? This is how experimentation began...

#### The first microwave oven

Engineers went to work on Spencer's hot new idea, developing and refining it for practical use. On October 8, 1945 Raytheon filed a U.S. patent for Spencer's microwave cooking process and an oven that heated food using microwave energy was placed in a Boston restaurant for testing. In 1947, the company built the Radarange, the first microwave oven in the world. It was almost 6 feet (1.8 m) tall, weighed 750 pounds (340 kg) and cost about \$5,000 each. It consumed 3 kilowatts, about three times as much as today's microwave ovens, and was water-cooled, so it also needed quite a good plumbing job.

An early commercial model introduced in 1954 consumed 1600 watts and sold for \$2,000 to \$3,000. Raytheon licensed its technology to the Tappan Stove company in 1952. They tried to market a large, 220 volt, wall unit as a home microwave oven in 1955 for a price of US\$1,295, but it did not sell well.

#### Developments and evolution of the microwave oven

In 1965 Raytheon acquired Amana, which introduced the first popular home model, the countertop Radarange in 1967 at a price of US\$495, marking the beginning of the use of microwave ovens in home kitchens. Although sales were slow during the first few years, partially due to the oven's relatively high price tag, the concept of quick microwave cooking had arrived.

In the 1960s, Litton bought Studebaker's Franklin Manufacturing assets, which had been manufacturing magnetrons and building and selling microwave ovens similar to the Radarange. Litton then developed a new configuration of the microwave, the short, wide shape that is now common. The magnetron feed was also unique.

This resulted in an oven that could survive a no-load condition indefinitely. The new oven was shown at a trade show in Chicago, and helped jumpstart a rapid growth of the market for home microwave ovens. Sales volumes of 40,000 units for the US industry in 1970 grew to one million by 1975. Market penetration in Japan, which had learned to build less expensive units by re-engineering a cheaper magnetron, was faster.

Technological leaps forward and further developments led to a microwave oven that was polished and priced for the average consumer's 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 their gas-based counterparts. 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.&nbsp;

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.

Several other companies joined in the market, and for a time most systems were built by defense contractors, who were the most familiar with the magnetron. By the late 1970s, the technology had improved to the point where prices were falling rapidly.

Formerly found only in large industrial applications, microwave ovens (often referred to informally as simply "microwaves") were increasingly becoming a standard fixture in most kitchens. The rapidly falling price of microprocessors also helped by adding electronic

controls to make the ovens easier to use.

Until now, a continuously expanding market has produced a style to suit every taste, a size, shape and color to fit every kitchen, and a price to please almost every pocket, so that now, microwave ovens are almost compulsory to be found among the home appliances in every modern kitchen.

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, leaving the spotlight for innovations such as microwave oven-toaster or grill combos. All you have to do now is opt for your oven of choice.