

Soon the Blendor was finding uses other than making the perfect daiquiri. Hospitals were among the early customers, proving it unequalled for preparing baby food. Modified for laboratory use, the newly renamed Waring Aseptic Dispersion Blendor helped Jonas Salk combat polio when used to grind up materials needed to prepare cultures for the polio vaccine.

BLENDER WARS

With success comes imitation, and soon rival blenders saturated the market. Where there's rivalry there are lawsuits, and the story of the Waring Blendor was no different. At issue was whether Osius's idea represented a real innovation that was protected by law. The courts agreed it did. A United States Court of Appeals ruled in 1959 that "Osius was the first to achieve . . . an improved apparatus not only to mix liquids but also effective to accomplish rapid and thorough disintegration, mixing and aerating of solids, including pulpy and fibrous materials, and fluent substances to form a uniform and creamy blend in which the solid material is thoroughly emulsified."²

With that court ruling it became obvious to the competition that the way to beat the Blendor barons at their own game was to create competing models overloaded with new features: lots of buttons.

Four-speed and then eight-speed blenders appeared in 1964. Waring fought back with a solid-state model in 1965, a nine-button beauty in 1966, and a dizzying fourteen-speed model in 1972. Button mania reached a peak in 1989 when Waring's deceptive eight-button model highlighted a breathtaking dual-speed feature giving it a dazzling sixteen operating speeds. Who could believe that anyone could have lived with just the original dual-speed model?

6

From a Melted Candy Bar to Microwaves

One sometimes finds what one is not looking for.

—SIR ALEXANDER FLEMING,
quoted in *People's Almanac*,
Vol. 2, 1978

NEXT TIME YOU nuke a bag of Orville Redenbacher's, you'll be repeating an experiment that heralded the dawning of the age of microwave cooking.

Almost fifty years ago, 1946 to be exact, one of the great minds in the history of electronics accidentally invented microwave popcorn.

Shortly after World War II, Percy L. Spencer, electronic genius and war hero, was touring one of his laboratories at the Raytheon Company. Spencer stopped in front of a magnetron, the power tube that drives a radar set. Suddenly he noticed that a candy bar in his pocket had begun to melt.

MELTS IN YOUR POCKET, NOT IN YOUR HANDS

Most of us would have written off the gooey mess to body heat. But not Spencer. Spencer never took anything for granted. During his thirty-nine years with Raytheon, he patented 120 inventions. When England was battered by German bombs in the 1940 Battle of Britain, Spencer turned his creative mind toward developing a

better version of the British invention radar. His improved magnetron allowed radar tube production to be increased from seventeen per week to twenty-six hundred per day. His achievements earned him the Distinguished Service Medal, the U.S. Navy's highest honor for civilians.

So when this inquisitive, self-educated, and highly decorated engineer who never finished grammar school came face to face with a good mystery, he didn't merely wipe the melted chocolate off his hands and shrug off the incident. He took the logical next step. He sent out for popcorn. Holding the bag of unpopped kernels next to the magnetron, Spencer watched as the kernels exploded.

EXPLODING FOOD

The next morning Spencer brought in a tea kettle. He wanted to see what microwaves would do to raw eggs. After cutting a hole in the side of the kettle, Spencer placed an uncooked egg into the pot. Next he placed a magnetron beside the kettle and turned on the machine.

An unfortunate (cynical?) engineer poked his nose into the pot and was greeted by an explosion of yolk and white. The egg had been blown up by the steam pressure from within.* Spencer had created the first documented microwave mess—an experiment to be inadvertently repeated by countless thousands of microwave cooks. He had also shown that microwaves had the ability to cook foods quickly.

Legend has it that this demonstration was reproduced before unsuspecting members of Raytheon's board of directors who had trouble visualizing exactly what microwaves could do to food. The ensuing egg shower convinced the board of directors to invest in the "high frequency dielectric heating apparatus," patented in 1953.

* Thus the myth was born that microwaves cook food from the inside out. Microwaves cook food by shaking up its molecules rapidly. To say food cooks from the inside is not exactly true. Microwaves may cook the outer layer of a frozen steak but dissipate before ever entering the meat's middle. The result is a frozen center and a cooked surface.



The first microwave ovens were too big for the home. Tilting the scales at 750 pounds, this one found its home on ships and trains.

That demo and the fact that the military no longer needed ten thousand magnetron tubes per week for radar sets helped shape the future of microwaves. What better way to recover lost sales than to put in every American home a radar set disguised as a microwave oven?

But first the device needed a better name. Raytheon's marketing mavens felt few people would demand a high-frequency dielectric heating apparatus for their kitchens even if they could pronounce it. A contest followed to rename the apparatus. Seeing as how the oven owed its roots to radar, the winning entry suggested "Radar range." The words were later merged to Radarange. But no words could hide the woeful inadequacies of this first-generation oven.

CUTTING IT DOWN TO SIZE

Weighing 750 pounds and standing five and a half feet high, the Radarange required water—and plumbing—to keep its hefty innards cool. Hardly the compact unit that fits under today's kitchen cabinets. The early 1953 design—with its three-thousand-dollar

price tag—was strictly for restaurants, railroads (the Japanese railroad system bought twenty-five hundred), and ocean liners. These customers would be Raytheon's prime market for two decades.

The microwave oven was no pleasure to cook with, either. Culinary experts noticed that meat refused to brown. French fries stayed white and limp. Who could eat this ugly-looking food? Chefs were driven to distraction. As chronicled in the *Wall Street Journal*, "the Irish cook of Charles Adams, Raytheon's chairman, who turned his kitchen into a proving ground, called the ovens 'black magic' and quit."

It would take decades before the consumer oven was perfected. The Tappan Company took an interest in the project and helped Raytheon engineers shrink the size of the magnetron. A smaller power unit meant the hideous plumbing could be done away with and air cooling fans could take over.

RADAR IN A BOX

Then someone had the brilliant idea that perhaps the magnetron should not be pointed directly at the food but rather out of sight. That's it. Put the food in a box, put the microwave source at the back, and lead the microwaves into the box via a pipe. Now we could truly call it an oven.

And that's what happened. In 1955 Tappan introduced the first consumer microwave oven. Did you have one? Hardly anyone did. It was still too big and costly. Then came 1964 and a breakthrough. From the country that had a reputation for making "transistorized" (read: small) products out of everything, Japan, came an improved electron tube. Smaller and simpler than the old magnetron, it put Raytheon on track to placing a microwave under everyone's kitchen cabinet.

Needing a consumer-oriented vehicle to sell its new ovens, Raytheon bought up Amana Refrigeration, Inc., in 1965 and put out its first affordable (\$495), compact, and practical microwave oven in 1967.



The first counter-top microwave ovens came only after years of shrinking down the original models.

IS IT SAFE?

The specter of little microwaves leaking out of the oven scared a lot of people. Their worst fears were realized in 1968 when a test of microwave ovens at Walter Reed Hospital found microwaves did indeed leak out. Federal standards set in 1971 solved that problem.

Today more homes have microwave ovens than dishwashers. And we owe it all to an inquisitive man with a melted candy bar in his pocket and egg on his face.