



“Who invented microwaves?”

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 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. A curious colleague joined Spencer, 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. The 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 revolutionise cooking, and form the basis of a multimillion-dollar industry, the microwave oven.

(Taken from <http://www.physicsclassroom.com/mmedia/waves/er.cfm>)

EXERCISES

1 True or false?

- a. Dr. Spencer was working on a different project when he discovered the effects of microwaves on food. T F
- b. Dr. Spencer used some popcorn, an egg and a hamburger to test his discovery. T F
- c. The microwave oven industry is a multimillion-dollar industry. T F
- d. During World War I, microwave ovens were already in common use. T F

2 Complete.

As has happened with many important,, microwave ovens were a by-product of another Dr. Spencer ran into this “invention” he was working on a radar-related project. It was 1946, and he was a magnetron: a new vacuum tube. After his work with the, Dr. Spencer discovered that the candy bar in his pocket had This queer event made him that maybe something new was near the tube. He put popcorn first and then an close to the tube, and correctly that exposure to low-density microwave can cook food very rapidly.

happening • whilst • think • melted • magnetron • some • research • egg • inventions • testing • energy • technology • concluded

3 Match questions and answers.

QUESTIONS		ANSWERS	
A	What was Dr. Spencer working on when he discovered the effects of microwaves on food?	1	A candy bar in his pocket melted while he was working on the magnetron.
B	How did Dr. Spencer build his first microwave oven?	2	He was testing a new vacuum tube called a magnetron.
C	Which was the first episode that made Dr. Spencer think that he should make some further researches on microwaves?	3	He built a metal box with an opening into which he fed microwave power. The energy entering the box was unable to escape, creating a high-density electromagnetic field.

A **B** **C**