

Keeping pace with Earl Bakken **Medtronic founder talks heart devices**

by Chelsea Jensen

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The quest to save lives using electricity began for 9-year-old Earl Bakken when he watched the 1931 film *Frankenstein* in which electricity restored life.

"It started as a fantasy about electricity and what it could do. I wanted to be an electrical engineer and I made all sorts of electrical items," said Bakken, who invented the first battery-powered, external short-term pacemaker in 1957. "I wanted to do something with electricity that would help people, and I kept that in mind as I developed devices."

Bakken, who formerly served on the North Hawaii Community Hospital's Board of Directors, spoke about the history of the pacemaker and the development of short- and long-term heart pacing over the past 60 years.

About 25 people attended the Wednesday afternoon Rotary Club of North Hawaii luncheon at Daniel Thiebaut's Restaurant in Waimea.

"Practically any place you go in the world there will be some people in the audience who are wearing one of our devices," said Bakken, 85. "It's a great (tribute) to what I've been able to do with my life ... There are millions of patients alive for maybe 10 or 15 years longer than they would have been."

Bakken co-founded Medtronic Inc. on April 29, 1949, with late partner and brother-in-law Palmer J. Hermundslie in Minneapolis.

In its 60th year of business, Medtronic employs about 38,000 people serving markets in 120 countries. The company donates between 100 and 200 pacemakers each year to patients worldwide, he said.

Originally a medical equipment repair shop, the medical technology company provides products and services using stimulation to treat more than 30 different chronic and debilitating diseases.

"Every 4.8 seconds one of our devices is being implanted some place in the world," said Bakken, who retired from Medtronic in 1989. "We started something that is helping millions of people each year."

While external pacemakers existed in the mid 1950s, they were bulky and required external power, making the product ineffective during power outages, Bakken said.

In 1957, Bakken developed the two-transistor, black and a white, 5800 Model. The battery-powered, short-term pacemaker connected one wire directly into the heart muscle and one just under the skin of the patient.

By 1959, Medtronic began working with St. Paul, Minn., surgeon Sam Hunter to create a battery-powered pacemaker for long-term use in adults with cardiac problems.

Using the Hunter-Roth Bipolar Cardiac Electrode, Medtronic planted two-prong, bipolar electrode into the heart muscle allowing patients to carry the external device in a shoulder harness, he said. Bakken added that the first patient effectively used the device for seven years.

Medtronic then contracted with another company in 1959 to create an implantable pacemaker, which was sold to several hundred people around the world, he said.

Today, the company makes at least 100 different stimulators for a variety of diseases and disorders ranging from cardiac and neurological diseases to diabetes.