

Gaylord honors 'father to the Information Theory'

By JULIE KETTLEWELL
Staff Writer

GAYLORD One-time Gaylord resident Claude Elwood Shannon, who through the years has made many significant contributions to modern technology, will soon be recognized publicly in Gaylord when a plaque honoring him is placed downtown in the location now known as Project Parkway. Last week the Gaylord City Council voted to approve the placement of the plaque, which is being donated by the American Society of Engineers in cooperation with the University of Michigan (U of M), Shannon's alma mater.

As necessity is the mother of invention, so is Shannon the father of the Information Theory, which established that information — from all sources, and in whatever form transmitted — is measurable. Shannon's keen insight and far-reaching vision, coupled with his scientific and mathematical mastery, provided a basis for many of the technological advances which have materialized in the last 50 years. And Shannon's eclectic career had its beginnings right here in the small community of Gaylord, his hometown.

THOUGH Shannon was born in Petoskey in 1916, he grew up in Gaylord where his father was a businessman and probate judge, and his mother served as principal of Gaylord High School. As a boy he attended Gaylord schools, and graduated from Gaylord in 1932, moving on to U of M. According to biographical data, as a child Shannon's hero was Thomas Edison, whom he later discovered was a distant cousin. And whether it was mere coincidence or there was something in the genes, Shannon was following in his cousin's footsteps at a very young age.

Shirley Glidden of Gaylord recalls some of young Shannon's enterprises, as they lived near each other as children and her brother, Rod Hutchins, and Shannon were

good buddies as well as conspirators in many scientific ventures. "He and my brother were always busy... all harmless projects, but very inventive," recalled Glidden, who was a few years their junior and always tagging along behind the boys. Erector sets were a great fascination for the two, she said. She also remembers "vividly" the time the two curious cohorts engineered an elevator in the Hutchins' barn and Glidden laughed. "I was the guinea pig for the elevator."

Another time the young teenage boys built a makeshift trolley which traveled the... hill behind the Hutchins home, but perhaps their greatest coup was their own working telegraph. Back then, explained Glidden, the area of Gaylord just north of Main Street was all pasture land. The Shannons lived on Old 27 North (Center Street), and the Hutchins were less than a half of a mile east. Barbed wire fence ran the distance between the homes, and the two aspiring inventors managed to transform that fence into a telegraph system using Morse code to communicate, later developing it into a working telephone line.

"People here in Gaylord do not realize just what Claude's contributions to everybody were," Glidden remarked. "Our televisions and communications systems are very indirectly related to him... He was

very intelligent, and he had that interest in engineering from the word go."

Shannon's interest in engineering eventually took him — along with his bachelor of science degrees in electrical engineering and mathematics — from U of M to the Massachusetts Institute of Technology (MIT). In 1936 he accepted a position with MIT as a research assistant in the Dept. of Electrical Engineering while continuing to study toward advanced degrees. In 1940 he received an S.M. degree in electrical engineering and a Ph.D. in mathematics. He went on to do research at Bell Telephone Laboratories in New York City, then spent 1940-41 on a National Research Fellowship at the Institute for Advanced Study in Princeton where he began seriously working on the communication theory and communications systems efficiency.

In 1948 Shannon published a paper entitled "A Mathematical Theory of Communication," to this day known as the beginning of Information Theory. The Information Theory Society Newsletter of the Institute of Electrical and Electronics Engineers states that Shannon's celebrated paper "marks the birth of the Information Theory as clearly as the Declaration of Independence in 1776 marked the birth

of a country." After laying the groundwork for the advancement of the communications networks nationwide and eventually worldwide, Shannon went on to conceptualize even more technological breakthroughs and author many more papers filled with his innovative ideas. Throughout the years Shannon has been recognized and honored on many occasions as a veritable pioneer in the fields of mathematics and technology. As stated in the Biography of Claude Elwood Shannon: "Today Shannon's insights help shape virtually all systems that store, process or transmit information in digital form, from compact disks to computers, from facsimile machines to deep-space probes such as Voyager."

THROUGH it all, the young Gaylord boy in Shannon lived on, and though he was revered as an accomplished scientist and mathematician, he never gave up the chance to have a little impish fun. To amuse himself, he invented many distractions, like a motorized, gasoline-powered pogo stick, a two-seater unicycle, a hundred-bladed jack knife, a rocket-powered Frisbee, and many other sophisticated toys. He continued nurturing his love for erector sets into his adult years, and always a lover of juggling, was often seen juggling down the hall on his unicycle at Bell Laboratories. Talented, intelligent, inventive and playful are all words that describe the man who once played in the fields outside this small community.

And the community of Gaylord, an integral part of his past, has always been close to Shannon's heart, according to his wife, Betty. "He always considered 'Gaylord home,'" she said in a telephone interview from her home in Winchester, Mass. "We enjoyed visiting there, and have visited several times over the years." During their last



A PLAQUE honoring Claude Shannon, former Gaylord resident who made significant contributions to modern technology, will be placed downtown in the location now known as Project Parkway.

visit in 1991, said Betty, her husband was honored to be asked to speak at the GHS commencement, and he often talks of his roots in this northern Michigan community. "We're very fond of Gaylord. I wish we could go back again," she remarked, but that is not likely to happen.

Shannon, now 82, is afflicted with Alzheimer's disease, she explained. "His memory is gone... his speech is not good but," she added, "he's in very good health otherwise and seems quite content." He still likes his music and will happily beat time to whatever is playing.

With regard to the honor which will be bestowed on her husband here in Gaylord, Betty said, "He would just be absolutely delighted. I can't think of anything he would like more," then added with some sadness, "I only wish that he were capable of seeing it (the plaque) or even knowing about it. It's just trag-

ic that he doesn't know about all the good things being done for him and about him."

It is ironic, too, that Project Parkway — which will soon bear Shannon's name — was once the site of the Shannon Building, which later became the Walker Funeral Home and later Glen Electric & Furniture. Shannon's father, Claude Sr., constructed the building in 1912. According to Lem Norstrom of Gaylord, long-time owner of the building, Shannon visited him once many years ago and was pleased to see the Shannon name still gracing the top of the old two-and-a-half-story building in the middle of the 100 block of downtown Gaylord.

"Although that building is no more, the father of Information Theory would undoubtedly be pleased to know the Shannon name will remain on that very spot for years to come — a fitting tribute, say people, to a man who has given the world so much."



FORMER Gaylord residents Melinda Glidden Cerny (l) and Randall Glidden talk with wife of Claude Shannon, Betty, at an international symposium in Boston which honored Claude as the father of Information Theory.

Engineering industry honors Shannon, his hometown

By MELINDA G. CERNY
Special to the Herald Times

BOSTON, MA. The city of Gaylord was honored Aug. 20 by the Institute for Electrical and Electronics Engineers Inc. (IEEE) as part of its symposium celebration of 50 years of "Information Theory" and the man who started it all, Claude Shannon.

Shannon, who grew up in Gaylord in the 1920s and '30s, wrote a landmark paper in 1948, entitled "The Mathematical Theory of Communication" that established the intellectual framework for the efficient packaging and transmission of electronic data. A young engineer at Bell Laboratories at the time, this paper is now considered the "Magna Carta of the information age."

His early mathematical theories demonstrated that information is a measurable commodity. John Horgan, editor for Scientific American, credits Shannon's insights for shaping "virtually all systems that store, process, or transmit information in digital form — from compact discs to super computers, from fax machines to deep-space probes such as the Voyager."

The international symposium included many reminiscences of Claude Shannon by colleagues and friends from his days at Bell Laboratories, Princeton and Massachusetts Institute of Technology (MIT). Shannon, a quiet, shy man was known as a kind and gentle mentor to his students at MIT but also as a playful prankster to his colleagues at Bell Laboratories. Stories of Shannon going down the hallways of Bell Labs, juggling, on either a unicycle or an electric pogo stick (his invention) are now legend.

SHANNON, who suffers from Alzheimer's, was not present at the banquet. Accepting a life-time achievement award on his behalf was his wife, Betty Shannon. In accepting the award she told the audience about the day that she and Shannon announced their engagement to their colleagues at Bell Laboratory. "Their response was 'do you know what you're getting into?'" She quipped to the banquet audience, "Nope, I didn't!"

Representing Gaylord at the banquet were former Gaylord residents, Randall Glidden and Melinda Glidden Cerny, children of life-long Gaylord resident,

Shirley Hutchins Glidden

"It was very important to us to have Gaylord representatives at this banquet," said Professor David Neuhoff from the University of Michigan. He continued that Gaylord is where Shannon grew up and it was important to the conference organizers to include Gaylord in their celebration of Shannon's life.

"I was very honored to represent Gaylord," said Glidden. Both Glidden and Cerny were greatly impressed with the role Shannon's childhood home played in the week-long ceremony. "They even had a conference room named Gaylord," said Cerny. "This was a real tribute to the town."

Later this year, IEEE will be presenting a plaque or possibly a statue to the city of Gaylord to commemorate Shannon's life. A possible location being considered is the former site of the Shannon Building, now the site of the memorial park on Main Street.

Glidden and Cerny, who live in the Boston area, are also the nephew and niece of Rodney Hutchins, a close childhood friend of Shannon's. Shirley Glidden remembers Shannon and her brother playing often together and hatching schemes.

"They were always cooking up something," Glidden said. "Claude was the brains and Rod was the instigator."

She remembers several inventions that the two boys made: an elevator made out of ropes and pulleys that took neighborhood children up to the hayloft in a crate; the "Turnerville Trolley," also a crate, on wheels that drove down a slope on tracks, and perhaps their greatest invention, the telegraph.

Claude Shannon in his own memoirs writes about the telegraph system. "... a friend of mine and I had a telegraph system between our houses, (using a barbed-wire fence) half a mile (apart), and we built the parts for this line for Morse code signaling. Later we scrounged telephone equipment from the local exchange and connected up a telephone."

It is this childhood invention, that many in the field pinpoint as the beginning of information theory.

—Melinda Glidden Cerny, coordinator of the Advanced Study Program Center for Advanced Educational Services at Massachusetts Institute of Technology, is a Gaylord High School graduate



Claude Shannon

Accolades many for Shannon

GAYLORD — In Claude Shannon's 60-plus years working in the mathematical and scientific arenas, he has received honorary degrees from the following institutes of higher learning: Yale (master of science, 1954); Michigan (1961); Princeton (1962); Edinburgh (1964); Pittsburgh (1964); Northwestern (1970); Oxford (1978); East Anglia (1982); Carnegie-Mellon (1984); Tufts (1987) and the University of Pennsylvania (1991).

His awards include: Alfred Noble Prize (1940); Morris Liebmann Memorial Award of the Institute of Radio Engineers (1949); Stuart Ballantine Medal of the Franklin Institute (1955); Research Corporation Award (1956); Rice University Medal of

Honor (1962); Marvin J. Kelly Award (1962); I.E.E.E. (Institute of Electrical and Electronics Engineers) Medal of Honor (1966); National Medal of Science (1966) presented by President Lyndon Johnson; Golden Plate Award (1967); Harvey Prize, Technion, Haifa (1972) presented by the President of Israel; Jacquard Award (1978); Harold Pender Award (1978); Audio Engineering Society Gold Medal (1985); Kyoto Prize (1985); and the Eduard Rhein Prize (1991).

Shannon has also been a Bolles Fellow at MIT; National Research Fellow at the Institute for Advanced Study in Princeton; Fellow of the Center for Advanced Study in the Behavioral Sciences, Stanford; Visiting Fellow at All

Souls College, Oxford; and Fellow of Muir College of the University of California, the I.E.E.E., and the Royal Society.

He is, or has been, a member of the National Academies of Sciences, the National Academy of Engineering, the American Mathematical Society, the American Philosophical Society, the Royal Irish Academy, the American Academy of Arts and Sciences, the Royal Netherlands Academy, the Leopoldina Academy of Leipzig, and Tau Beta Pi, sigma Xi, Phi Kappa Phi, and Eta Kappa Nu. For many years he was also a member of the board of directors of Tele-dyne, Inc.

(Taken from Claude Elwood Shannon, Collected Papers, IEEE Press)

Matt Sides
See me for your new car!



**Chevrolet
Oldsmobile
Jeep
&
Nissan**

NISSAN OF GAYLORD

"JUST OFF I-75 EXIT 279"
2781 Old U.S. 27 South,
Gaylord, MI 49735

(517) 731-3000

werrnigs@freeway.net



JIM WERNIG
CHEVROLET
OLDSMOBILE
JEEP

Chevrolet Oldsmobile Jeep

**Old 27 South,
Gaylord
(517) 732-5161**