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A man and his machine

40 years of catching an idea out of thin air

Monday, July 16, 2007

By Tom Stafford

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Jesus is said to have spent 40 days and 40 nights in the wilderness.

It's now been 40 years since Kyle Gerhardt had a vision of an electricity-producing windmill and 30 years since he put his ideas on paper.

But at 81 and sporting a brand new hip, Gerhardt hasn't lost faith.

He figures — and has refigured for decades in his green workshop on Springfield-Xenia Road, south of Springfield — that his windmill has a .553 coefficient of efficiency.

That means it converts more than half of the energy of the wind it captures into electricity, enough to power a small house or farm operation efficiently.

"There's nothing in this world you're going to find that's as efficient as this one," he said, including those huge windmills that look like hyper-size airplane propellers.

"That's the trouble, they're for airplanes, not the air that's moving," Gerhardt said.

"They're only a .19 to .29 coefficient of performance," he said. "And as big as they are, they're as noisy as can be," he said. "Mine's perfectly quiet."

What it lacks, he said, is someone to produce it.

A vision from above

Gerhardt's notion for his low-speed wind machine came to him "in three to 10 seconds" as he was approaching Wright-Patterson Air Force Base landing field while taking instrument flying lessons in a Beachcraft Bonanza in April 1967.

"The airfoil of the blade or wing or whatever you wish to call it was there plus other info," he wrote in a reminiscence.

"I thought about it all the way down," Gerhardt added, so much that "I can't remember anything the ground controller said."

Much of Gerhardt's story has been documented over the years in news accounts — accounts that began about the time his windmill tower became a landmark at 4111 S. Yellow Springs Road.

In a booklet he assembled about his "innovative wind engine," Gerhardt describes all he has done as "a learning experience."

The man who took "practical arts, which included as much math as I could take," before January 1944 graduation from Springfield High School said one thing he has learned is the time since is this: "Some people don't know what they're talking about."

Referring to himself smilingly as a dumb farm boy, he said he was always mechanically inclined during his years growing up near Husted, just down the road from his current home.

During those years, he learned that no matter what people said, the best indicator that something worked was simple: it worked.

After his time in the Army Air Corps, Gerhardt went on to become a contractor, learning some of the building skills that would help him assemble the plans, materials and workings to produce a windmill.

An energy boost

It wasn't until gasoline prices went over \$1 a gallon in 1977 that Gerhardt decided to get in gear on his windmill idea. His first venture was a 10-foot diameter model he mounted on the back of a dump truck and tested at a then all-but-abandoned runway at Springfield Municipal Airport.

That — and wind tunnel tests — eventually led to the construction of a tower and his first full-size windmill, 54 feet in diameter, in 1982. But when he tried to mount the wheel to the tower, a supporting cable broke and the wheel came crashing down.

Although he's now at work on his ninth version of the wheel, Gerhardt doesn't regret the eight cast-asides, some of which make up a museum collection of sorts that resides in his workshop.

"It took me those others to know that one was the best way to go," he said.

His proposed production model features a 38-foot diameter wheel with a 40-foot tail to balance and guide it into proper position in the wind. It calls for an 85-foot, 5-inch tower.

The wheel itself has 210 "blades" or air foils that look like sections of airplane wings. Their job is to catch the air, which at 8 to 8½ mph, he said, can drive one of two electrical power systems or a vacuum system for Amish farmers who will use vacuum power but not electricity.

The wheel makes one revolution for each mile an hour of wind speed.

Although Gerhardt said the spacing of the blades and how they allow air to spill off one to the other is critical to the design, he said the whole device contributes to its efficiency.

"Everything you do makes a difference."

The next step

Over the years, high winds and shredding cables have destroyed a couple of his mills, the latest one when a tornado struck about four years ago.

Gerhardt estimates he's put about \$3.5 million in time and materials into the project.

With energy prices rising, "I know there's a market for it," he said.

But with an initial investment of about \$200,000 and a payoff period stretching to nearly 30 years, his windmill is not for consumers affected by the changing winds of technology.

The investor may have to be nearly as patient as the inventor.

And Gerhardt is that.

Equipped with a new hip at 81, he still hopes to show the world that his project has legs.

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