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HumanBeams invention aims to let anyone make beautiful music

Laser melodies goof-proof

By Jane Larson for The Arizona Republic

Longtime Valley musician Jerry Riopelle has developed HumanBeams, a laser beam musical instrument machine.

Jerry Riopelle calls it “the Jetsons’ Piano.” Where else but in a futuristic cartoon can you play music by breaking beams of light? And where else can anyone, ranging from the musically inept to those who simply balk at lessons, play like a professional who's had years of training?

Valley rock musician Riopelle figures that after nine years of tinkering he is close to mass production, and reality, of futuristic music machines that could enliven every family's living room.

Called HumanBeams, Riopelle's invention with his son Paul, is a mix of hardware and software that allows users to move amid laser beams and set off harmonious combinations of sounds.

One instrument was installed at Phoenix Children's Hospital last month, where therapists hope to use it to encourage movement and boost children's spirits.

Children have so far been captivated by the instrument, said Danette Pape, child life director at the hospital. Making music helps them express themselves and feel more at ease in the unfamiliar setting, she said.

Riopelle said the device, unlike just about any other musical instrument, always plays harmonies no matter how it's used. No painful off-key sounds. No bad notes.

"You can play it right away, and you can't make anything bad happen," Riopelle said. "Any beam you break will do something palatable."

Riopelle is adamant that the machine not be a toy. He calls it interactive music, giving people with ordinary abilities the chance to take charge of music-making the way disk jockeys, composers and conductors do.

Users can play casually with the instrument, or they can learn which beams produce which sounds and become good at making their own music with it.

Riopelle, who divides his time between homes in Scottsdale and Hawaii, became popular in the Valley during the 1970s and 1980s. Rock and blues fans considered his annual shows at Phoenix's Celebrity Theatre the only way to spend New Year's Eve.

He retired three years ago after 12 albums and 25 years in the business. But he did not give up the occasional charity show or the desire to tinker with technology.

Riopelle remembers as a child growing up in Tampa, Fla., being fascinated by the light-triggered door announcer at the local ice cream shop. As a musician, he thought of using lights to control a synthesizer, and decided to give it a try.

He built his first device in 1994, a clunky contraption of laser pointers taped to plastic pipes and wired to a synthesizer. When he started a patent search the next year, he was surprised to find he had something new.

Several iterations and $600,000 in investments later, it works like this: Move anything - your arm, finger or a baton - to break the laser beams, which then send signals to sensors that command a computer to play the notes. And the instrument has shrunk from the space-consuming size of a treadmill to one that sits on a tabletop.

Converting the guts of the device to software that runs on a laptop computer will help lower the cost from around $4,000 apiece to $700 or below, he said. Within six months he expects to have mold makers, laser suppliers and the rest of manufacturing lined up so mass production can begin. Patents are pending.

Human Beams last fall picked a Bellevue, Wash., startup, NewBlue Inc., to develop the music software. NewBlue co-founder Todor Fay had previously been at Microsoft Corp., where he helped create DirectMusic, the nuts and bolts for delivering music in the Windows operating system.

Fay said what sets Riopelle's invention apart from devices "that sort of shoot at this" is his rare ability to understand both technology and music. Creating something as complicated and sophisticated as music takes more than writing code, he said.

"Different composers use different techniques, and the last thing you want to do is force someone down a specific path," Fay said. "We came up with tools so composers could choose."

Riopelle envisions selling HumanBeams in music stores and over the Internet. He sees beam bands springing up, and users buying disks programmed - but not too programmed -- to play rock, hip-hop, jazz, classical or country sounds.

And he is gratified that the Phoenix Children's Hospital plans to use it as therapy.

The HumanBeams at Phoenix Children's Hospital was financed by the Meyerson Foundation, founded by two Arizona State University professors to help children with disabilities.

The foundation also plans to fund a music therapist to use HumanBeams in rehabilitation, foundation director Kerrie Simpson said. If research can show the

instrument helps children gain coordination and range of motion, the foundation would like to expand its use in other hospitals, she said.

If not, "we'll just let the kids have one hell of a good time," she said.

Both Fay and Riopelle think HumanBeams will be popular with professional musicians, but also give anyone who likes music the chance to do more than listen to recordings.

HumanBeams lets people experience what musicians experience, Riopelle said.

"Why is it a big deal to play music? Why do people envy musicians?" Riopelle asked. "Because on a good day, there is nothing like it. You're elevated. You just forget everything. It's a special thing."