

Inventor Updates the Old Player Piano With the Latest Technology

By DON HECKMAN

The effect is almost eerie, at first. The room is a perfectly ordinary studio in an industrial part of Culver City. In one corner, a seven-foot concert grand piano—the lid removed—stands against one wall.

Then the piano keys begin to move—without apparent human help, as if touched by an invisible virtuoso—and a fountain of music pours forth: delicately pedaled Chopin, bombastic Liszt, richly textured Duke Ellington. The sound is magical.

Inventor Wayne Stahnke, having just pushed the computer buttons that set his remarkable piano in action, smiles knowingly. He has experienced it all before: the amazed response, the dumbfounded shaking of the head, the probing looks inside the instrument.

Nearly everyone has heard some kind of player piano, of course, perhaps at Disneyland, perhaps in a grandparent's antique parlor. But Stahnke's instrument, and the music it produces, are as far from the clattering ragtime of player pianos as CD albums are from Edison recordings. There are no foot pedals to pump mechanical pneumatics, no cylinder rolls of punched paper. The only visible indications that this is anything other than a typical concert grand piano are a boxlike addition discreetly tucked beneath the instrument's midsection, and the slot for a 3½-inch computer floppy disk drive.

Veteran classical pianist Earl Wild, whose playing has been recorded in every imaginable audio medium, has high praise for Stahnke's technology.

"The reproduction is wonderful," Wild said. "It reigns supreme over any reproducing piano I've ever played, and I've played every kind over the last 50 years."

It may, in fact, not even be completely accurate to refer, as Stahnke does, to his piano as a "reproducing" instrument. Computer controlled in a fashion that precisely replays the finest nuances of a pianist's keyboard and pedal actions, it produces what can be considered, for all practical purposes, a virtual clone of the original performance.

Equally important, it records as well as reproduces, making it invaluable as a teaching tool. Students find it particularly valuable to record a rehearsal, then have the opportunity to immediately evaluate every subtlety, every dynamic, every touch of the keys and pedals.

Stahnke's technology, which took more than a decade to evolve from his own hand-constructed instruments into the state-of-the-art Bosendorfer SE, is now licensed to the Yamaha Corp.

Stahnke, of West Los Angeles, is quick to acknowledge himself as "a failed pianist."

"When I was a kid," recalled the tall, lanky, 49-year-old inventor,



Wayne Stahnke spent more than a decade perfecting the technology for his pianos, which is now licensed to Yamaha Corp.

"I took plenty of lessons, and I was struggling with the technical aspects of playing the piano the way everyone does when they're 8, 9 or 10.

"Then, when I was around 13 years old, Disneyland opened. We went there, and they had a player piano—which was something I'd never seen—and it was playing all those notes, with perfect accuracy, and amazing rapidity. And something clicked in my brain. It was a combination of seeing this machine do all this stuff—and it was a player piano, so it wasn't all that great—and remembering the problems I was having with my own technique. I guess that's when the idea began to germinate that what I wanted to do was to build a machine that would do what I couldn't."

Stahnke was nearly 30 before he took the initial steps toward realizing his dream. In the interim, he collected a degree in electrical engineering from UC Berkeley, got married and launched a successful career as an aerospace engineer.

But the notion of creating a reproducing piano kept floating around in his mind. It finally started to become a reality in the early '70s as the result of an unusual synchronicity of events.

"The first thing," Stahnke said, with a laugh, "was that my wife was willing to support me while I pursued this impossible dream; can't underestimate the importance of that. The second was that optical sensors and, a little later, microcomputers made their appearance.

"I was incredibly lucky in that my interest, and the time in my life when I could work on these instruments, coincided almost exactly with the arrival of the technology that could make it possible."

His first piano—which relied on complex wired circuitry rather than computer control—was never quite finished. "Once I reached a certain point with it," said Stahnke, "I knew where I had to go with the next generation. And I always knew that it would take several stages to get to where I wanted to go."

Stahnke's second effort was a giant step in that direction. Built on commission for a wealthy patron, it took advantage of the newly emerged Intel 8080 microprocessor chips to provide computer control.

"It was a pretty nice piano," he said. "It recorded and played beautifully, and there was a lot of

shading and feeling. And I knew what had to be done to make it even better."

Unfortunately, there were problems with durability. The instrument required frequent fine tuning and tinkering to maintain its optimal qualities.

The third attempt was the charm. Stahnke reduced the number of parts, solved the mechanical difficulties and built an instrument that was "... pretty much what I envisioned 20 years ago, from the standpoint of both aesthetics and durability. I just had no idea it would take so long to finally produce it."

In 1984, his technology was licensed to Bosendorfer, a Viennese manufacturer of a highly regarded concert piano. At \$80,000, the Stahnke/Bosendorfers were not exactly aimed at the mass market. But institutions such as the Royal Academy of Scotland, the Royal Academy of London and Indiana University have acquired them.

Stahnke's piano designs became considerably more accessible in 1991, when his concepts and patents were integrated into Yamaha's Disklavier reproducing piano. Although the company's grand piano version is still a pricey \$40,000, upright instruments can be had for \$7,000.

His current activity, the recording and distribution of computer diskette-stored performances for reproducing pianos, addresses that problem directly. His company, Live Performance, now has issued twenty disks of music ranging from Chopin and Mendelssohn to Fats Waller and George Gershwin, performed by, among others, Wild, Philippe Entremont, Gerald Robbins, Johnny Guarnieri and Dick Hyman; two of the releases are computer-reconstructed versions of original piano rolls by Zee Confrey.

Although Stahnke is now devoting his energies to the expansion of Live Performance's catalogue of recordings, he also is an important member of the Yamaha development team, providing his singular expertise to the company's continuing advancement of reproducing piano technology.

"I think that what I had in mind 20 years ago when I started this whole thing, is eventually going to come to pass," he said. "I wanted to build a perfect reproducing piano—one that would record and play in a way that would satisfy the finest musicians. And, in parallel with that, I wanted to build something that would be much simpler, much cheaper, but that would play and record well, and cost maybe one-tenth as much. Both of those instruments are now available.

"Lastly," added Stahnke, "I wanted to establish my own credibility as the person who could do it. I hope—I think—that's what I've been able to do."

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