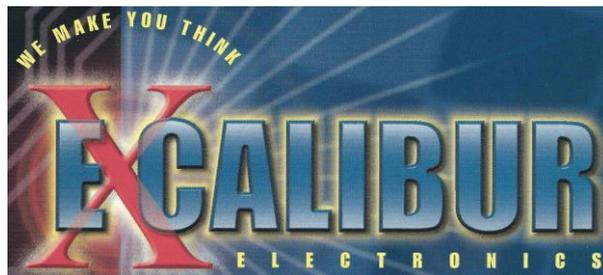


Paul Wiselius (2020)
An interesting career as a chess programmer
Ron Nelson (re)visited

For those who follow the world of chess programming and dedicated chess computers, the Hiarcs.net forum will not be unfamiliar. On the initiative of mostly Fernando Villegas and Steve Blincoe, many meaningful and nonsense discussions are held, among other things, for learning and remembrance. A few of those discussions were about Ron Nelson, and what he would or would not have programmed. Until, at the end of 2015, this legendary pioneer himself suddenly appeared on the forum ...!



The reason for this was a discussion with the rather provocative title "**Ron Nelson Ever Copied, Used, Cloned the Spracklens?**". The theme "Who programmed the Excalibur Grandmaster?" was also discussed again. A suspicion was that it could be Gyula Horvath, because the levels corresponded to the CXG and Krypton models that contained a program from Horvath. In terms of playing strength they also matched, only the playing style was clearly different. But not so:

"Fascinating. No, I never copied, used, or cloned the Fidelity program written by the Spracklens.

Inventor Chess Challenger.

I am the one whose name is on US Patent 4,235,442.

I am the one who programmed every line of code for every chess game produced by Excalibur Electronics. There was no team. Just me.

I designed every schematic, every circuit board, every housing. I wrote and desktop published every Instruction Manual (*). I designed everything about the Excalibur LCD Chess. It's new housing design was later copied by Sony in their Walkman Bean. I designed and programmed the Excalibur Gametime Chess Clock."

Ron Nelson wrote the Grandmaster program for the H8 processor himself, with advice from Larry Kaufman and the "Attack bitmaps" technique that Ken Thompson had explained to him. However, he had a lot more to share with us, and I want to try to summarize that in this article. To do so, I have summarized and translated his posts in the various discussions on Hiarcs into a more or less coherent story.

Ron Nelson: Thanks for your interest in me and my products. I would not have normally engaged discussions on a forum, but I could not let anyone think I had used the Fidelity Spracklen program, or that I had not personally programmed and designed every chess computer Excalibur manufactured in China.

(Paul Wiselius: except for the earliest Excalibur products and the Excalibur Grandmaster Karpov 2294.)

But let's start with his personal story, which I haven't come across anywhere before. And which is the main reason I started writing this article! As most insiders know by now, his girlfriend at the time worked for Fidelity as secretary to Sidney Samole, the owner of Fidelity. At the time, Sid followed the TV series "Star Trek" and saw Mister Spock play a game of chess against the on-board computer. He wondered if you could make something like this for home use.

He talked about it with his secretary, who told him that Ron also made chess programs on his hobby computer. He had Ron come immediately, and after a meeting he was hired immediately. Until then Nelson had mainly programmed in Basic on his Altair 8080 hobby computer, but for this project he had quickly mastered the programming in assembler (machine code). Moreover, he was an electrical engineer, and at his previous employer Zenith had already gained the necessary experience in designing PCB's (Printed Circuit Boards). And so chess computer history began in 1977 with the Fidelity Chess Challenger (1).



Director of Engineering: Ronald Nelson

(Photo: Fidelity brochure 1980)

Ron Nelson: There have been many lengthy periods of good times and many euphoric moments of success, during my long career in the Consumer Electronics and Computer Chess field. But all has not been rosy on my consumer computer chess timeline. The Samole company bankruptcies were devastating. When Fidelity Electronics, Ltd. went bankrupt, I had personally loaned the company \$350K to forestall the inevitable.

Then came Fidelity Computer Products, Inc., which went under, then came Fidelity International, Inc. This company was saved by the Fidelity Par Excellence because of its certified high rating, but more importantly I had redesigned the electronics cutting the cost in half, yet we charged more for the product. High margins keep companies in business. Fidelity International, Inc. was successful but eventually Sid Samole wanted to cash out, at about the same time we lost the World Micro Tournament in Spain.

Now comes a very painful episode

But he had a problem. I had a contract for royalties for all computer chess games. What I didn't know, was Hegener & Glaser would not buy Fidelity because of it. So one morning Sid Samole called me into his office and fired me. I was in shock for days, so much so I did not consult a lawyer. And at the severance meeting with Sid and his lawyer brother Myron, I signed away my rights, in exchange for being hired as a consultant with 12 months of guaranteed projects.

Just before Sid started the selling of Fidelity International, my wife was diagnosed with terminal colon cancer. At the severance meeting Sid even said this arrangement would give me more time with my dying wife. Coincidentally, when the 12 month guaranteed project period ended, my wife passed away and I and my four young children had a different life to adjust to.

But life goes on...

I found work at a startup consumer music keyboard company, which was ideal for my Jack of All, Master of None credentials. But this experience rekindled my love of music, which brought me to dancing and the eventual software programming of music analysis and beat detection. Which I do now as a hobby.

Back in business

Meanwhile, Sid Samole had started a company, Pop Up Inc. and counseled his son Shane on starting Excalibur. Shane started importing chess games from Eric White in Hong Kong. But Sid counseled Shane that his company needed to make products and sell them to be successful. So Sid contacted me, on Shane's behalf, and negotiated a deal and contract where I could work at home 3 days and at the Pop Up, Inc offices, Excalibur shared, for 2 days, thus allowing me time to raise my family. The contract was for royalties for any chess computer sold by Excalibur including Eric Whites.



The Excalibur headquarters in Miami

About the Grandmaster...

Sid Samole still was of the mind that the high-end consumer chess market was still attractive, and wanted me to work on the Mirage, but work with David Levy for the chess engine. I said I had a partial H8 chess engine

(Paul Wiselius: the H8 processor was the then trending RISC processor.)

GrandMaster

Excalibur Electronics brings you an electronic chess masterpiece—the Grandmaster! "Grandmaster" is the highest title awarded to human players. Excalibur's Grandmaster earns its name by capturing the essence of top-level chess competition not only in its powerful play, but in its look and feel. Its tournament-size vinyl playing surface shows off a meticulously crafted set of official pieces, weighted so they won't tip over during a game. And Grandmaster features some of the most technologically advanced chess features in the world. The result—a highly sophisticated but easy-to-use competition chess set that combines classic design with 21st century technology.

Enhanced Teach Mode
This mode enables each player to track their scores as well as receive hints.

Rivalry World's Greatest Chess Matches

Equalizer
Allows beginners to play on par with advanced players through the assistance of the computer.

Two Large Informative Packed LCD Displays

Feather-Touch Auto Sensory Move Entry System
Unique durable vinyl surface with magnetic sensors to accurately track your every move.

Tournament-Sized Chess Pieces
Official-sized weighted chess pieces with 3.75" lang.

- World's first auto sensory board with actual vinyl surface used in tournament play
- Super strong chess program capable of beating over 99% of all chess players. Estimated rating of 2200 master-strength
- 2 Large LCD Displays with Dual Chess Clocks and Countdown Timer shows your every move, hints, warnings, and scores.
- 100 levels of play, plus 5 teach modes, 32 book opening trainers, and 32 great games
- 1 or 2 player mode with scoring, hints and analysis
- Saves game in memory for future use
- Powered by 4 AA batteries or optional A/C adapter

Excalibur Grandmaster #747K

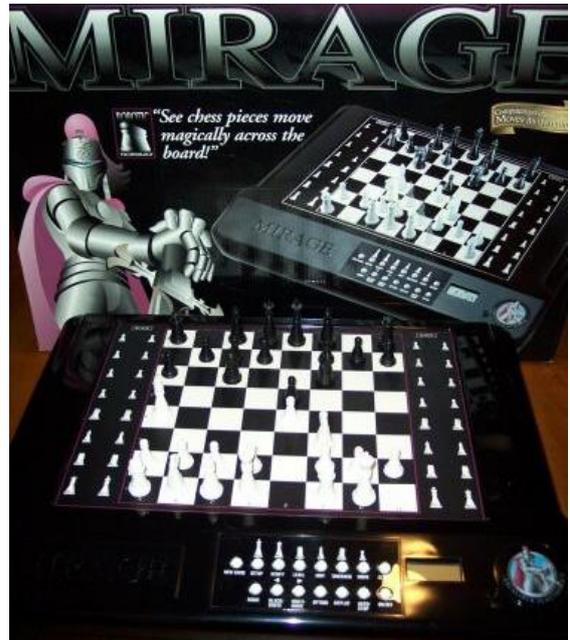
It still needed further developing and that I could do it myself with consultation by Larry Kaufman (a local chess Grand Master and computer chess expert). So Sid said yes, as long as Larry approved the final program as being strong. According to some dates I recorded, it took 6 to 9 months. So if the Grand Master product, a sister product of the Mirage, plays chess relatively well, it is because of Larry's expertise. But the Pop-Up Tent, Inc mechanical "engineer", screwed up on the Mirage housing design and the main motor mounting was off axis and caused high failure rates. At this same time, I also designed the Ivan with the H8 engine and Eric White's HK company produced it for us.

(Paul Wiselius: there are two versions of the Ivan with two slightly different H8 programs.)

But I was also completing my low end chess line at about that time, and we received a fantastic bid for producing them from another Hong Kong manufacturer, Sametime, Ltd, and started the production of my 6805 games there. This worked well, so we asked our Mirage & Grand Master Hong Kong manufacturer, EWIG, Ltd to quote on the Ivan. They were much lower than Eric White's manufacturing company so we switched. That is when Excalibur severed close relations with Eric's company and Excalibur started its own Hong Kong presence.



Ivan The Terrible (10 MHz) #701E



Mirage #702E

Sid Samole's Pop Tent, Inc had folded (the inventor told Sid he applied for a patent, but a distributor the inventor had contacted before he talked to Sid, filed their own patent on the inventor's design. The inventor's patent claims was rejected, and that was the end of Pop Tent). So Sid was now full time at Excalibur and assumed control, and they moved to a smaller building. This was in 1999. I took a 9 month sabbatical to work full time on a new 4-bit chess engine, a new LCD segmented chess display and an innovative new housing design, that years later, Sony would copy and call the Walkman Bean. I returned to Excalibur and with the LCD Chess design in hand, I negotiated a more lucrative contract for myself.



Because of the mechanical design problems and lack of knowledge and experience by EWIG in Hong Kong to produce a sophisticated moving chess piece product, there were many returns of the Mirage, which was bad for Excalibur's financials. So Excalibur was not doing well when I returned. But that Christmas, LCD Chess was a huge success, and I was told by people in the know that I had rescued Excalibur to fight another day (year). First the Par Excellence, now again a successful low cost, high profit margin, quality product breathes fresh air into a company when it is needed.

The Excalibur Grandmaster design is totally my work. I wrote the H8 code. The book openings for all the Excalibur Chess Games were designed by Larry Kaufman. Larry Kaufman is a most brilliant Chess Master who understood computer chess search. He would explain to me how Franz Morsch evaluated positions, just by playing his program. He was incredible. He wrote a list of things for an evaluation function and how to balance it. His piece weightings were different than the Spracklens.

I never agreed with Sid Samole about the lucrative business possibilities in the high end chess market. I wanted the average Joe consumer chess player or chess player want-a-be's. The Hitachi H8 was being phased out for masked chip production, but the OTP was still available at a premium but had to be individually programmed.

So I made a huge effort and translated my H8 chess engine to the Sunplus later General Plus SPLB or GPLB series with 6502 core and LCD dot matrix drivers. I seem to recall it didn't have as much ram as the H8, so I could not use the Attack Bit Map tables. In masked ROM releases you sweat bullets worried that it wouldn't work or had a bug. So I minimized risk, and commented out the call to the Ponder Routine, and knew battery life would double, since the chip went to sleep while the human thought. A better trade off in my system design philosophy.

(Paul Wiselius: this is also the reason that the Alexandra and the Phantom Force robot, among others, cannot think in the time of the opponent. As well as all later Excalibur chess computers.)



Phantom Force #740D

I do not pretend to think I am in the same league as the Spracklens, Kittinger, Lang, Morsch or Schröder. They are all brilliant people that, to my knowledge, worked 24/7 on their high end chess programs. I on the other hand designed and programmed many consumer products and games. I enjoyed working at the low end and the challenges small memory and low cost processors presented. I was proud of my single chip 8049 2K bytes 128 byte ram chess engine. My 4-bit processor chess engine was also another great accomplishment for me since it used sophisticated PRV and Killer Move search techniques.

(Paul Wiselius: In 2009, Excalibur went bankrupt and was taken over by EB Electronics. In 2010 he was fired and he retired.)

I do (not) want to get back into computer chess. I am comfortably retired enjoying life with my (2nd) wife, traveling (European River cruises are fantastic), my grand children and dancing. I teach Line Dance in the afternoon and the evenings on Tuesdays, today. Yesterday I went to a Line Dance class in Orlando and danced for 3 hours. I have more interest in writing an AI Choreographer than another chess program. I am not a fan of Facebook, but I recently joined so I can record my life events, and go backwards on the timeline to memorialize my life. I do not accept friends I do not personally know.



I wrote and desktop published every Instruction Manual... (*)

Nelson later corrected this statement: Al Lawrence was the one who wrote the first manuals for Excalibur. When Lawrence was given more executive responsibilities, Ron took over this work from him.

References

https://www.hiarcs.net/forums/search.php?search_author=ChessChallenger

<http://www.spacious-mind.com/html/excalibur.html>

https://www.chessprogramming.org/Ron_Nelson

<https://www.flickr.com/photos/10261668@N05/sets/72157600923819227/with/858218235/>

Author: Paul Wiselius, December 2020

For your information: The Dutch version of this article by Paul Wiselius appeared in Computerschaak no. 2, December 2020. In part 2 – More inside information and interesting facts from his working life at Fidelity and Excalibur. Part 2 will be added to this article later in the year.