

# *Sargon fought until the very end!*

*- By Rob van Son -*

You may wonder what this title does have to do with chess? To understand this we are going back in time to the seventies of the last century.

In 1974 Dan Spracklen was working with the computer-firm Univac in California (USA). During an information science evening course he met Kathe, a woman who in the daytime worked as a math teacher and lemonade vendor.

She also turned out to be a very active chess player, who played up to 200 tournament games a year. By playing this many games she was able to force up her American rating with more than 400 Elo points. Dan and Kathe decided to get married and went to live in San Diego, California together with Dan's children from his first marriage.



(Photographer: Monroe Newborn)

Kathe and Dan Spracklen at the 9th ACM North American Computer Chess Championship, Washington, DC. Kathe and Dan Spracklen were the husband and wife team who wrote Sargon. Like many early microprocessor-based chess programs, Sargon was written in assembly language. Sargon won the microcomputer chess tournament at the Second West Coast Computer Faire in 1978.

## *Assembler*

In September 1977 Kathe and Dan were able to secure a list containing the beginning of a chess program written in the programming language Basic. Since both Kathe and Dan loved chess and moreover knew how to write a program, this list exercised an enormous attraction. In fact, the idea to personally write a chess program tremendously appealed to them.

They soon started writing, first in a pseudo-code that was suitable for the machine language Assembler. They did this because they did not know yet on which computer the program would be able to run and what instructions the processor belonging to it would ask for. Home computers were not very well known in those days. There was the Apple II, but that did not run on Assembler. They chose to write their program according to the Shannon A and B-strategy. First all possible moves are calculated in detail by the program with the brute-force method (A-strategy), but when the variants tree becomes too big and too deep, the B-strategy sees to it that a selection is made of the best moves only, thus saving much time.

## *Wave Mate Jupiter III*

In an electronics store Kathe and Dan spotted a Wave Mate Jupiter III computer with a Z-80 microprocessor running on 2 MHz. An additional advantage of this computer was that it could be programmed with the Assembler programming-language. They bought it and because they did not have a computer table yet at the time, they had to put it on the kitchen table for the time being.

Dan needed to be away from home for a week for his work and in the meantime Kathe energetically started manufacturing the interface of their chess program. She saw to it that the graphical material such as the chessboard and the chess pieces could be seen on the screen of the computer. When Dan came home again, Kathe had largely finished the graphical part of the program.

In the first three weeks of January 1978 the Spracklens worked intensively on the program. Dan busied himself with the chess part of the program (the engine) and Kathe took care of programming the graphical details. Those weeks of hard work had not been for nothing. The program now was able to play two plies from the opening. A ply is half a move so 1. e4 and the program could respond to this move with the ply 1...e5.



## *Sargon was born*

They also thought about a suitable name for their new creation. First they meant to name the program Jupiter after the name of the computer the program was running on, but they did not like that so much after all. The planet Saturn and a moon of this planet, Oberon, also did not suit them. The combination of these two names led to Sargon, which also happened to be the name of an Assyrian warrior from Mesopotamia who often won. Sargon of Akkade lived around 2300 years before Christ. Kathe thought this name sounded powerful and so Sargon was born.

## *Sargon first tournament*

On 25 February 1978 the Spracklens received an invitation to participate the next month, from 3 through 5 March, in the first chess tournament for microcomputers in the Convention Centre in San Jose, situated in the famous Silicon Valley in California. Among the eleven participants were three chess computers that were already commercially available: Boris, Compu Chess and Chess Challenger 3. Also participating was a prototype, the Commodore Chessmate, the commercial version of which was to be launched at the end of 1978. The Metalbox was a computer from Steve Stuart and he had assembled the machine himself for only 85 dollar. The other six programs ran on so-called hobby or home computers, predecessors of the present personal computer. Two of those, Processor Technology and Compucolor, were already being sold on cassettes. Sargon, Mark Watson, SD-Chess and Tenberg Basic were programs that were individually developed by amateurs.

The playing speed was fifty moves in two hours. This immediately resulted in huge problems. The programs written in the programming language Basic sometimes needed nine hours to completely finish a game. There was no way the intended playing time of two games a day could be realised. Some games were broken off halfway and then arbitrated by the tournament leader. Sargon won the tournament with a score of five points out of five games, ahead of programs like Boris and Chess Challenger 3, which only scored three points.

After this big success the Spracklens steadily continued improving Sargon. They wanted to propagate their knowledge to anyone who was familiar with programming in Assembler. They for instance wrote a small brochure named: A Computer Chess Program in Z-80 Assembly Language, that sold for 15 dollar. They also wrote two large articles in the American trade journal BYTE and they wrote a book for the Hayden Book Company in New Jersey with the title: SARGON A Computer Chess Program. Kathe and Dan found it important that no one who wanted to write a chess program would need to reinvent the wheel but instead could obtain the basic instructions from their publications.

## *Sargon II at the North American Computer Chess Championship*

Sargon still needed a great deal of improving. It is true that the program had won the first microcomputer tournament but it was by far not strong enough to participate in the ninth North-American Computer chess championship that was to be played from 3 through 5 December 1978 in the Sheraton Park Hotel in Washington D.C. Fortunately Kathe and Dan were able to do quite a bit of tinkering on their Sargon in the next few months. They improved the opening repertoire, they refined the positional analysis of the program and they developed a beginning of an endplay methodology. The result did not fail to come and in test games the new Sargon, renamed Sargon II, already proved to play much stronger than microcomputers like Boris of Applied Concepts or The Chess Challenger 10 of Fidelity Electronics.

In December the time was finally there. Kathe and Dan travelled in their car; a Toyota with licence-plate SARGON 2, to Washington D.C. International Master David Levy was the tournament leader.

The big giants of computers participated in this tournament. Of the twelve participants only two were microcomputers: the programs Sargon II of Kathe and Dan Spracklen and the program MIKE from England. Sargon II obtained joint 3<sup>rd</sup>-5<sup>th</sup> place with 2.5 points from four games. The program of Kathe and Dan, running on the Wave Mate Jupiter computer that cost five thousand dollar, was able to beat the program AWIT, running on a big Amdahl 470/V6 computer that cost five million dollar, in 66 moves. With four points out of four games the program Belle of Ken Thompson won the tournament. This tournament made it clear that it is very well possible to play chess with much cheaper microcomputers. After this tournament chess programmers could henceforth enter each following tournament with their microcomputers.

Following the big success of Sargon II the program was mid-1979 available in the stores on cassette for the TRS 80 (level 2) and the Apple II computer for the price of 30 dollar. The trading-firm Chafitz from Rockville (a town near Washington D.C.) had been supplying electronic games for many years. Among other things they were responsible for the marketing and sales of the chess computers Boris, Boris Master and Boris Diplomat manufactured by Applied Concepts from Texas (USA) and programmed by David Lindsey. Chafitz offered Kathe and Dan a contract to start working with them and to further develop Sargon II.



(Photographer: Monroe Newborn)

October 1979: Sargon 2.5 at 10th ACM North American Computer Chess Championship in Detroit, Michigan. Sargon inventors Kathe Spracklen (left) and Dan Spracklen (far right) with version 2.5 of their program. At the 10th Annual ACM Computer Chess Championship supercomputer-based Chess 4.9 won the tournament, followed closely by custom chess machine Belle. Sargon 2.5, the only microprocessor-based chess program in the tournament, came in an impressive seventh place.

In co-operation with Applied Concepts a new commercial version of Sargon was to be launched. In the beginning of 1979 Kathe and Dan Spracklen accepted the contract and started to work with the programmers David Slate and Larry Atkin, who already had been working with Chafitz for some time and were the spiritual fathers of the famous chess program from the seventies: 'CHESS.' They did not need to travel to Rockville, but could continue working in their place of residence San Diego.

In December 1979 this led to a new store available chess computer, the Chafitz Sargon 2.5 Modular Game System (MGS). John Aker, at the time hard and software adviser with Chafitz, worked for a week in the cellar of his house in Kansas City together with Dan Spracklen to make the Sargon 2.5 program work well with the Modular Game System. The chess computer was equipped with a small pushbutton-control panel and the chess program-module, running on a 6502 / 2 MHz microprocessor. The advantage of this system was that you could replace the program at a later stage by a more powerful module without having to buy a whole new computer. Moreover this computer was suitable for other game-modules like checkers or blackjack. The control panel contained a chessboard and the chess-pieces could be pushed underneath the chessboard as a drawer in a space next to the control panel.

### ***The first chess computer with Permanent Brain!***

The most unique difference of the program Sargon 2.5 as compared with its predecessor Sargon 2.0, but also with the other then available commercial microcomputers, was that the 2.5 version could think in the time of its opponent, the so-called permanent brain. The funny texts during the game such as: "Are there ladies present? or May I cheat?" were taken over from the first Boris computer, but in the Sargon 2.5 MGS these texts would be more focussed on the board position.



**Modular Game System with the Sargon 2.5 module.  
World's most advanced computerized game concept.**

The American trading-firm Palmer, McBride & Kincaid Associates tested the then store available chess computers in detail and the Sargon 2.5 MGS ended in first place. Its rating was estimated at  $\pm 1641$  Elo-points. Up until 1981 the Sargon 2.5 continued to determine the image for the public as the strongest playing chess computer. However, there was a price attached to it. At the Purveyor of toys to the Queen, Merkelbach, at the time situated at Kalverstraat 30 in Amsterdam, it cost 1500 guilders (€ 681). There was also a very luxury version available, the Sargon 2.5 ARB. This computer cost 3500 guilders (€ 1588) and was fitted with a large and very luxury board of precious wood. Its read-contacts see to it that the chess-piece only needs to be moved and that the computer registers the move immediately. The answer of the computer is shown by means of 64 little LED-lamps situated at each corner of a square. ARB stands for Auto Response Board. The firm of William F. Drueke & Sons, Inc. from Chicago (USA) made the woodwork of the Sargon ARB.

## ***Rob plays against the Sargon!***

At the time, your author too got excited by the news of the Sargon 2.5 MGS. In the last quarter of 1979 several rumors circulated in the Dutch chess world about a very strong playing chess computer that would be on sale soon. The computer was even said to once have played a draw against a Grandmaster! Early 1980 I was about to spend all my savings on a Voice Chess Challenger (999 guilders, € 453), but after reading an article in the Dutch chess magazine "Schaak Bulletin" titled "The Micros" (March 1980 of the Dutch writer Tim Krabbé), I decided to wait with the purchase. What also kept me from buying was my experience with the predecessor of the Voice, the Chess Challenger 10, which was very easy to defeat. In 1981, I went with a friend to Merkelbach in Amsterdam, being still very interested in the new Sargon. But I first wanted to test its playing strength by testing it in the store.



The salesman of Merkelbach put the computer on a table in front of me and set it at a level where the Sargon doesn't think too long about its reply. The salesman apparently expected me to be swept off the board, after which I immediately would pull my wallet to get this super computer in my possession. I started to play, the salesman and my friend watched intently. Shortly after the opening, Sargon played some weak moves. My position on the board became quickly much better and I even was able to win some material. Sargon responded by rolling his lyrics, very fitting for his losing position: "May I Cheat" or "Should We Switch Sides?" I heard the salesman swallow and noticed his cheeks turning red. He obviously thought, 'there goes my sales...' I was proud I won the game, but also somewhat disappointed because I really had wanted to buy the computer. As it was, I no longer dared, especially considering it had a price tag of 1500 guilders. Still, it's nice to know that today I am in possession of two Voice Chess Challengers and a Sargon 2.5 MGS. Moreover, I paid far less for them!



Rob van Son (left) with the Sargon 2.5 and his chess friend Peter Schimmelpennink, at the 2<sup>nd</sup> CSVN Chess Computer Users Tournament - 14/15 October 2000

## ***The first chess robot: 'Boris HANDroid'***

Finally a very exclusive chess robot with the Sargon 2.5 program would come out on the market, the Boris HANDroid. With a special arm, controlled by three servomotors, this robot was able to move the chess-pieces entirely by itself. On 16 September 1980 the robot was presented to the public by the German importer of Applied Concepts, Sandy Electronic in Munich. During and after the presentation the robot could already be ordered and the computer was to be delivered before Christmas of 1980 for about 3000 Mark (€ 1534). Unfortunately the machine was never taken into production and nowadays only a few prototypes remain. We only know for sure that Rolf Bühler from Zurich (Swiss) is the proud owner of a Boris HANDroid. A few years ago, I asked Dan Spracklen about this chess robot, but he had never heard of it!



(Photographer: Rolf Bühler)

For the first time presented (June 1980), the famous Applied Concepts Boris HANDroid.  
The world's first (prototype) game-playing automaton!

## ***Legal battle***

In May 1980 Applied Concepts announced that they would no longer contract out the marketing and sales of their products, including the Modular Game System (MGS), to the firm of Chafitz, but bring it under their own control. Chafitz reacted vehemently and this incident led to a legal battle over the rights of the Modular Game System. The contract of Kathe and Dan Spracklen was in jeopardy. Applied Concepts refused to pay the agreed two-dollar per computer sold. In the end Kathe and Dan agreed to a compromise of fifty dollar-cent per piece sold. The computer was renamed Boris 2.5 again by Applied Concepts, while the program remained the Sargon 2.5.

## ***Fidelity Electronics***

Because of the legal squabbling Kathe and Dan looked for a better employer. Officially they entered employment with Fidelity Electronics from Miami in June 1980. Fidelity boss Sid Samole mentioned this in an interview during the first North-American Microcomputer Chess Championship in September 1980 in San Jose in California. The winner of this tournament was the Champion Sensory Challenger X (X stands for experimental) with a score of four points out of four games. Had Kathe and Dan already been working on the development of this machine? Ultimately Chafitz were forced to give back the marketing and sales of the Modular Game System to Applied Concepts and Chafitz reached an agreement with Fidelity Electronics with respect to the taking over of Kathe and Dan Spracklen's contracts.

After this the Spracklens could peacefully continue working on the development of Sargon with Fidelity Electronics. They did not need to move to Miami for this employer either and could keep on working in their place of residence San Diego. Kathe became an expert in making ever-larger opening libraries for their programs. The name Sargon could not be used with their new employer, but its spiritual parents made Sargon live on in highly modified form in later Fidelity chess computers such as the Elite, the Sensory 9, the super-luxury Prestige, the Avant Garde, the Excel 68000 club, the Mach III. The Fidelity chess computers were available in very luxury designs with a chessboard of precious wood, but for the smaller purse much cheaper models of synthetic material were also made. Opinions about the appearance of these plastic machines differed quite a bit. Some people called these models 'bathtubs.'



An early model of the **Fidelity Prestige with the flat display** at the 30th CSVN (simultaneous) users tournament in Leiden (13 June 2015). This Prestige was upgraded with the Avant Garde 2 program running on a 68000 Motorola 16MHz processor. First owner the Dutch chess computer expert Jan Louwman, second owner Rob van Son. The Prestige won 'the best move trophy.' The simultaneous display against 12 chess computers was given by Prof. Dr. Jaap van den Herik and IM Hans Böhm.

### ***Four World Titles!***

Kathe and Dan won the world title of the World Microcomputer Chess Championships with their programs four times: "***London 1980, Travemünde 1981, Budapest 1983, and Glasgow 1984***". This resulted in the further production of many strong playing and well sold Fidelity chess computers. Unfortunately their success came to an end at the end of the eighties by big competition of Hegener and Glaser (Mephisto) in Munich and the high exchange rate of the dollar. In 1989 Fidelity was taken over by Hegener and Glaser and the Spracklens moved to Saitek from Hong Kong, which took over Mephisto in 1994.



## *Finally the SPARC module*

Kathe and Dan's last program, the Sparc-module for the Renaissance-board, was written for Saitek and from 1993 everywhere for sale. In spite of being the strongest program ever produced by the Spracklens (Elo  $\pm$  2200), this Sparc could hardly meet the challenge of the emergence of the cheaper and ever stronger playing chess-software for the Personal Computer.



(Photo: Steve Blincoe)

Saitek Kasparov SPARC-module

## *The End of an important Era*

In October 1993, during the 12<sup>th</sup> World Microcomputer Chess Championship in Munich (Germany), their Kasparov Sparc ended in 15<sup>th</sup> place only and that was for Saitek reason not to renew their contracts. Kathe and Dan washed their hands of computer chess and disappeared noiselessly from the chess-stage. With this the computer chess world lost a famous couple that with their programs made so much of an impression on the numerous lovers of our royal game. Sargon was indeed an Assyrian warrior who often, but not always, won...!

Dan and Kathe are now enjoying life in Oregon, a state just above California where they moved 10 years ago to. Dan works as a 3D programmer for a game development studio. Kathe is doing the computer programming for a local company that wholesales craft supplies. They no longer spend any time on chess but they do think back fondly at their time with computer chess. Their oldest daughter gave them four grandsons which keep Kathe and Dan pretty busy buying presents for!

### **References:**

Martin Gittel; SARGON Porträt eines Schach-Programms, Salzgitter 1983.

Modul / January 1989. Göran Grotting: EINE LEBENDE LEGENDE; ein Interview mit Kathe Spracklen.

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