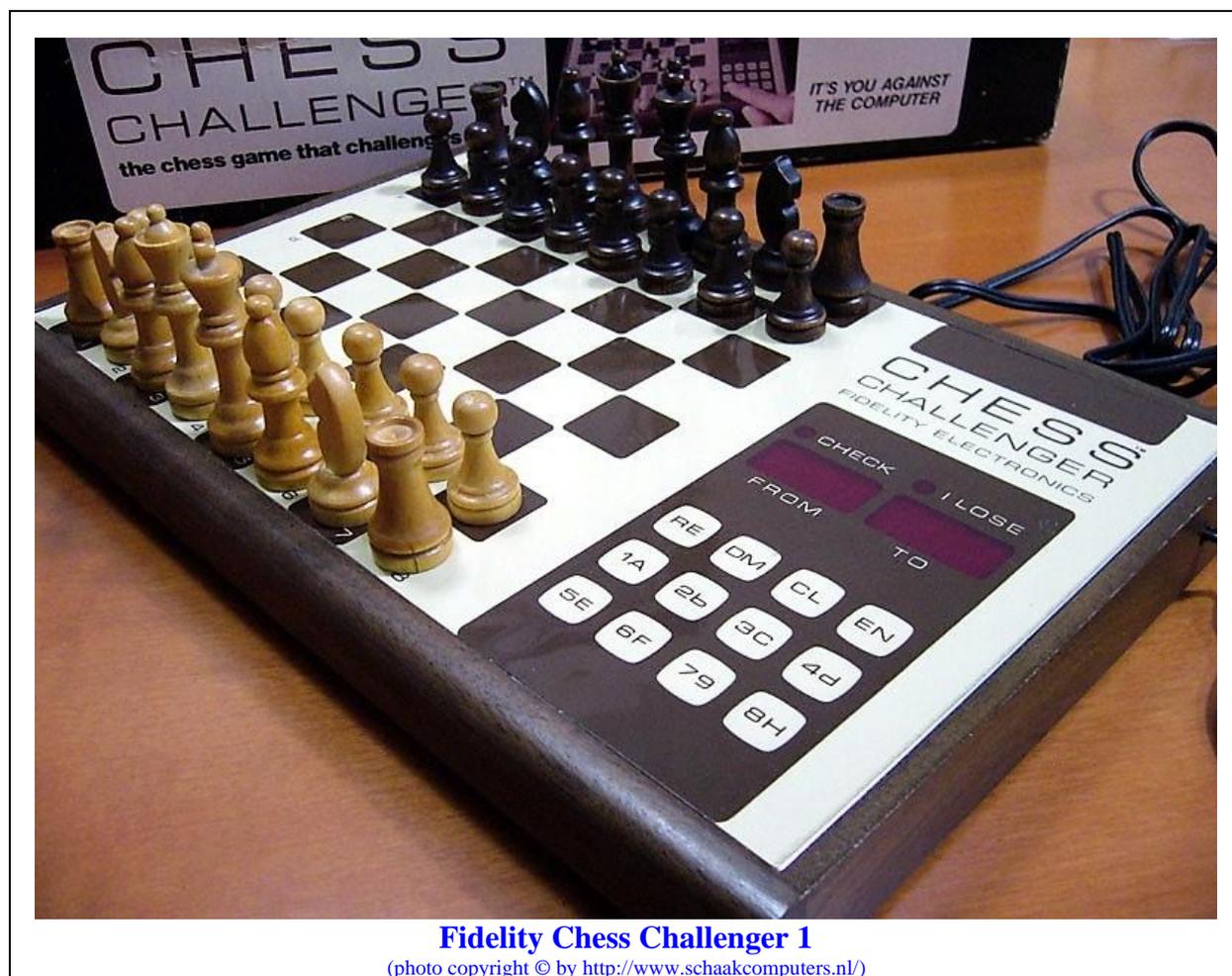


The chess computer challenges you!

**** by Rob van Son ****

The title of this article is printed in large letters in an advertisement of November 1977 in the Dutch chess magazine 'Schakend Nederland'. It is a company called Bron Electronics from Tilburg that offers the very first chess computers through this advertisement. Two models can be ordered, the Basic Chess Challenger with one level for 585 guilders (€ 265) and the Master Chess Challenger with three levels for 895 guilders (€ 406). The importer of electronic games, the firm W. Goes Technische Handelmaatschappij BV from Amstelveen (a city near Amsterdam), already advertises the Chess Challenger in the September issue of 'Schakend Nederland'.



It is the sensation of 1977. Who would have thought that, a chess game with a built-in computer! Do you want to play chess and have no opponent? Well, this problem is solved after purchasing a real Chess Challenger, imported straight from the USA! The advertisement states, among other things, that the advanced and reliable microprocessor enables the computer to always make the strongest possible countermove. Any thoughtlessness will irrevocably lead to checkmate! Moreover, the Master Chess Challenger has three levels, increasing in strength from average to extremely difficult. Before you are able to beat level 3, you must be a very strong chess player, at least that is the impression you get when reading the advertisement of Bron Electronics.

Who started this revolution in the chess world? For this we have to go back in time to the year 1959, when in December in Chicago, Illinois (USA) the company Fidelity Electronics Ltd was founded. It started in a small office with the import of hearing aids from the company Viennatone from Austria. They also sold various other aids in the audio-visual field. It was a great success, so that in the early 1970s the company moved to larger premises in Chicago and the workforce grew to 35 employees. Sidney Samole and his brother Myron had purchased the company on March 1, 1970 and were its only shareholders. Fidelity's activities were expanded in the first half of the 1970s with the production of artificial limbs for American war invalids returning from Vietnam.

Star Trek as a source of inspiration

At the beginning of 1976, Fidelity's 'big boss' Sid Samole watched the popular science fiction television series Star Trek and saw how Mr. Spock played chess against one of the computers on the spaceship Enterprise. The next day he spoke about this to his secretary, who told him that her friend was creating a chess program. Sid reacted very enthusiastically and asked if he could meet him. That friend, Ronald C. Nelson, had bought a so-called 'Altair 8080-kit' in 1975, which he used to assemble his own home computer. This Altair computer was the first predecessor of the later Personal Computer. Ron, then already in his twenties, was a hardware specialist and had a Master of Science degree in Electrical Engineering. By day, he worked as a designer of electronic circuits and automated test systems at 'Zenith Radio Corporation'. In his spare time, he programmed games on his Altair 8800 computer (with the 8080 processor) in the Basic programming language. Ron had been a regular participant in chess tournaments during his high school years and this gave him the idea of creating a chess program.



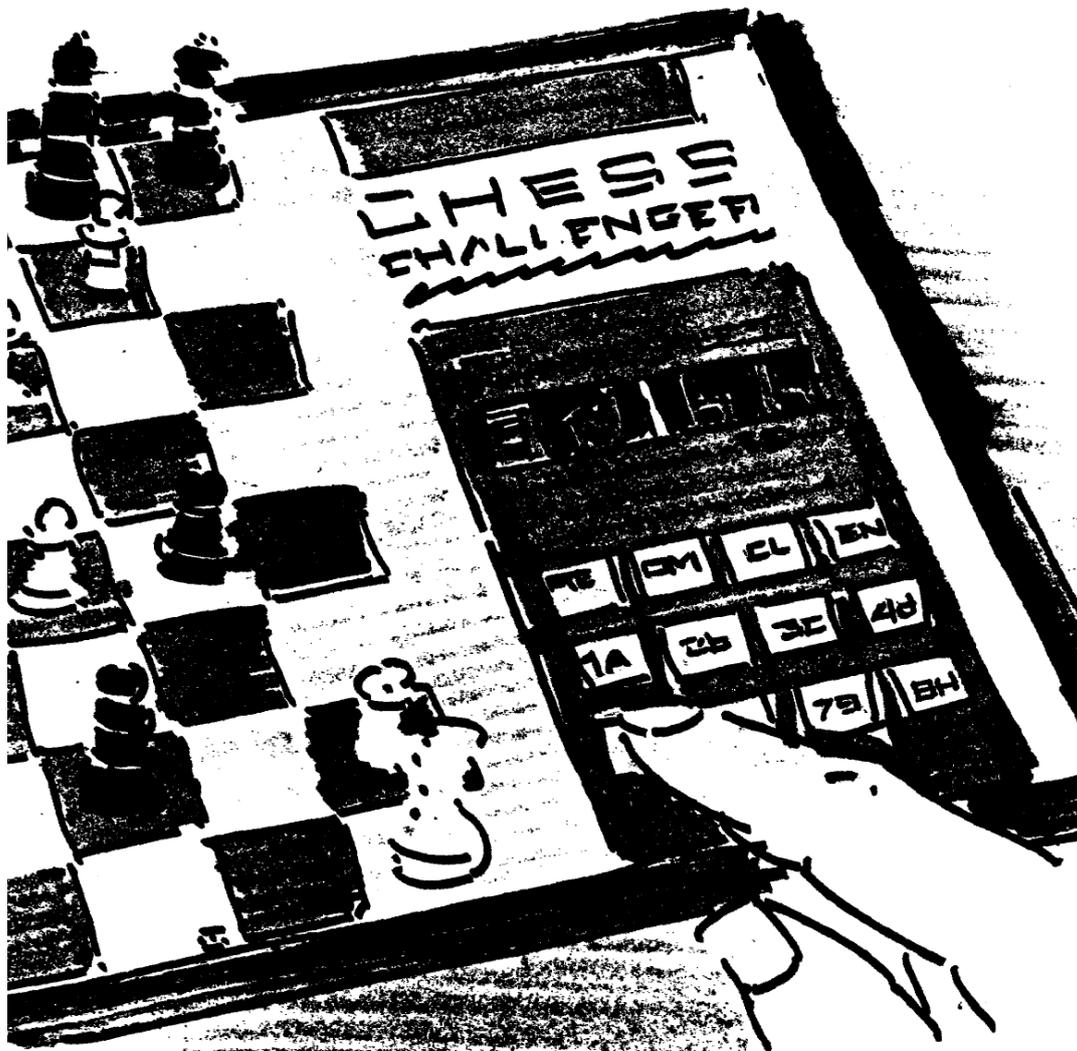
Brussels 1981: Sid Samole of Fidelity Electronics (left) and Ed Slaap of Wegam Trading, are testing two Checker Challengers at the Belgium branch of Wegam, N.V. Cinem S.A.

(photo by Rob van Son) (photo copyright © by <http://www.schaakcomputers.nl/>)

When his girlfriend told him that her boss was very interested in his chess program and wanted to meet him, Ron Nelson immediately accepted the invitation. Three months later he was able to put a working prototype of a chess computer on Sid Samole's desk. He had learned the art of programming in the 8080-assembly programming language especially for the processor housed in the prototype. After making a few improved prototypes, Sid Samole decided to promote Ron's chess machine, now renamed the Chess Challenger, at the Chicago Winter Consumer Electronics Show in January 1977.

NIEUW UIT AMERIKA!

chess challenger



The concept drawing shown was derived from the photo on the manual and packaging box of the Chess Challenger 1. The Dutch leaflet was made for its successor, the Chess Challenger 3. In the final version, the finger moved from button 5E (E5) to G7.

(photo by Rob van Son) (photo copyright © by <http://www.schaakcomputers.nl/>)

It became a huge success and Fidelity began production of the world's first chess computer. In March 1977, the computer was on sale in American shops. The Chess Challenger 1, so called because it has only one chess level, measures 30.7 x 20.5 x 3 cm (lxwxh) and the cabinet is made of beautiful teak. The chessboard and the control panel are covered by a brown-beige protective film. Furthermore, the device has an 8080AF processor with a clock speed of 2 MHz, 2 Kb ROM (Read Only Memory) and 512 bytes RAM (Random Access Memory) for the chess program.



**Chess Challenger 1 has a clearly readable display!
White plays 5b-5d, which means pawn from e2 to e4.**

(photo copyright © by <http://www.schaakcomputers.nl/>)

Switched board coordinates

The first Chess Challenger was a great success. It was certainly not perfect, since it did not yet master all the rules of chess, could only play with black, allowed illegal moves and had a calculation depth of 1 ply (half a move) at most. But there was also something very special about the chessboard. Instead of reading the letters a to h at the bottom of the chessboard and the numbers 1 to 8 at the left side, the coordinates of this Chess Challenger had been swapped! So, 1 to 8 horizontally and a to h vertically. The indications on the keys, intended for entering the moves, were also adapted to this. On the control panel, you will also find a display with the words 'from' and 'to' above it, so that the opponent can see what kind of move he/she is entering and can read the computer's answer. Above the display, there are also two LED lamps that light up when the king is in check or to indicate that the computer is giving up the game. Below the display are twelve keys of which the first four are for special functions and the remaining eight are for entering moves.

He devised a coordinate system but did not realise that this system was not equivalent to the notation used in Europe. It did not directly affect sales because the first Chess Challenger was only intended for the American market. There were 1000 pieces produced of this computer, which, by the way, was also imported into England by Messrs Clive Bourne and Paul Balcomb from London. There, the swapped board coordinates, unlike the European mainland, were no problem either.

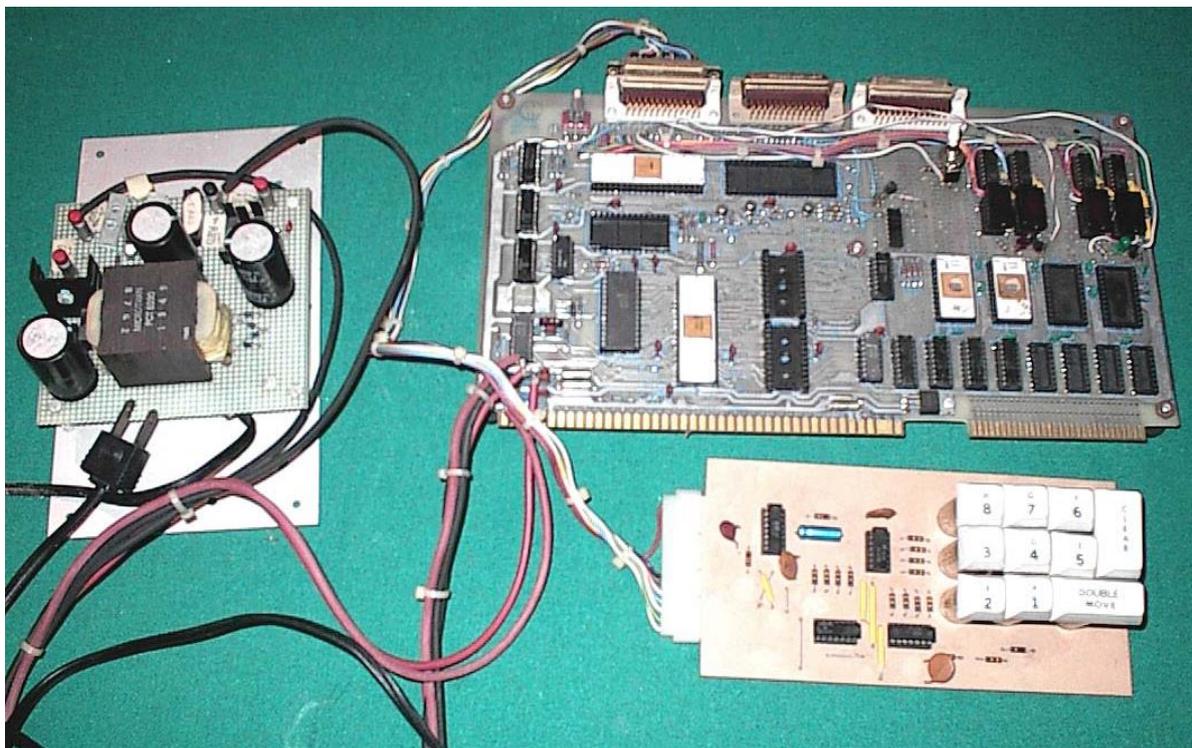
How does the Chess Challenger 1 play?

On 25 June 2000, I played a game with the Novag Robot Adversary against the Fidelity Chess Challenger 1 at the home of the German collector Manfred Vellmer. I soon got used to entering moves with those swapped coordinates. The robot knocked him off the board with ease. Judge for yourself the play of the world's very first chess computer!

Novag Robot Adversary - Fidelity Chess Challenger 1

1. f4 d5 2. Nf3 d4 3. c3 dxc3 4. Nxc3 Nc6 5. e4 Nb4 6. d4 b6 7. Qa4+ Bd7 8. Qxb4 c5 9. dxc5 bxc5 10. Qxc5 e6 11. Qe5 f6 12. Qd4 e5 13. fxe5 fxe5 14. Nxe5 Be6 15. Bb5+ Ke7 16. Nc6+ Ke8 17. Nxd8+ Ke7 18. Qc5+ Kxd8 19. Qxf8+ Kc7 20. Qxa8 Kb6 21. Qc6+ Ka5 22. Qa6+ Kb4 23. Qa3# checkmate. 1-0.

Sid Samole, despite the sensation created by the first chess computer, was also criticised. The swapped board coordinates, the lousy play and the allowing of illegal moves, made him decide to bring an improved version on the market a few months later, in July 1977. It became the Chess Challenger 3, which not only had the numbers and letters back in the right place, but also had three game levels and no longer allowed illegal moves. Moreover, from 1 June 1977, owners of the first Chess Challenger could upgrade their computer to version 3 for only 75 dollars. Presumably, Fidelity continued this upgrade service for a while in 1978 for customers who wanted to upgrade their Chess Challenger 1 or 3 to version 10 (UCC10), without having to buy a new chess computer.



Printed-Circuit-Board prototype Fidelity Chess Challenger

(photo copyright © by Ronald Nelson) (photo by Rob van Son) (photo copyright © by <http://www.schaakcomputers.nl/>)

The Chess Challenger comes to the Netherlands

The company W. Goes from Amstelveen was specialised in building techniques, such as building machines and various materials. Director and buyer Ed Slaap was in America in January 1977 and visited the Chicago Winter Consumer Electronics Show. He met Sid Samole who presented his very first chess computer on his stand, between the refrigerators and freezers. Ed was very impressed by this brand-new electronic chess device and thought it was a very interesting item for the Dutch market. The contact that arose between him and Sid Samole resulted in the import of the Chess Challenger 3 into the Netherlands a few months later. Sid required a minimum purchase of 100 pieces from Ed and only offered a contract after prepayment of the ordered computers.

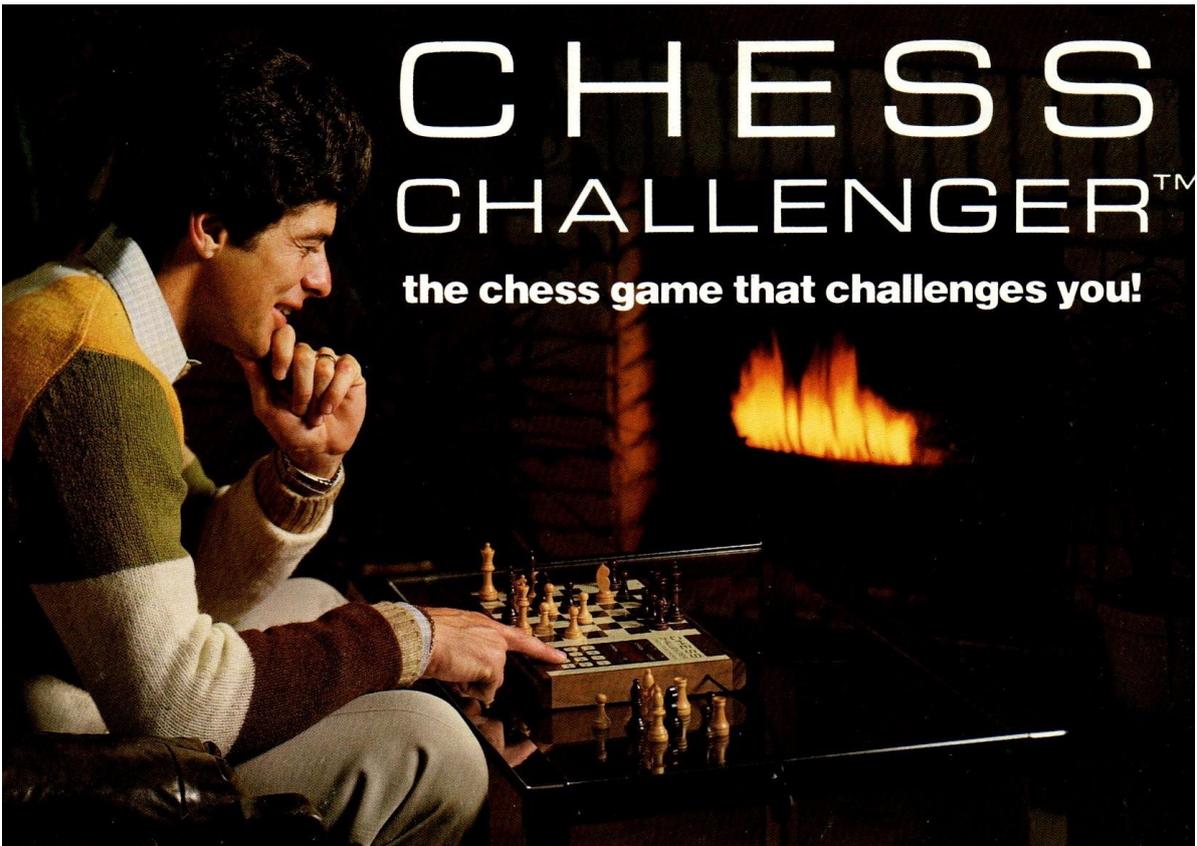
Bron Electronics in Tilburg was unable to conclude a contract with Fidelity because of the minimum purchase requirement, but still managed to import the Chess Challenger 1 and 3 in very limited numbers via Messrs Bourne and Balcomb from London. He probably sold a small number of them in the Netherlands. The Goes company was able to do business with Fidelity and got the sole representation of their computers in the Netherlands, starting with the Chess Challenger 3.



As you can see, the original chess pieces are actually just a bit too big!

(photo copyright © by <http://www.schaakcomputers.nl/>)

The first major customer was the department store Vroom & Dreesmann, because the buyer at the time, a very fanatical chess player, rightly saw a gap in the market. Within six months, the Goes company managed to sell 600 to 700 Chess Challengers to V&D. In total, they supplied about 1500 pieces of this model to the Dutch retail trade. Ed Slaap himself translated the English manuals of the computers into Dutch and the Goes firm was able to repair defective machines quickly and professionally in a specially equipped workshop. At the end of 1978, they changed their company name to Wegam Trading.



CHESS CHALLENGER™

the chess game that challenges you!

**Fidelity Electronics
has developed
eye-catching,
full color
point-of-purchase
packaging. Entire
game is styrofoam
protective encased.**

WHO IS FIDELITY ELECTRONICS?

Fidelity is the world's largest manufacturer of Myo-Electric Prosthetics and Orthotics and is a world renowned manufacturer of biomedical products.

SOME OF FIDELITY'S WELL KNOWN PRODUCTS INCLUDE:

- MYO-ELECTRIC HAND SYSTEMS
- MYO-ELECTRIC HOOKS
- ELECTRIC ELBOWS
- ELECTRIC ORTHOSES
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- HEARING AIDS
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FIDELITY ELECTRONICS, LTD.

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Telephone: (312) 237-8090

Who is Fidelity Electronics? Reading the back of the advertising brochure, it is hard to imagine that a company like Fidelity would sell chess computers.

(photo by Rob van Son) (photo copyright © by <http://www.schaakcomputers.nl/>)

NIEUW UIT AMERIKA!
chesschallenger[®]
Het schaakspel met de
ingebouwde computer-tegenstander



The final printed version of the Dutch leaflet for the Fidelity Chess Challenger 3.

(photo by Rob van Son) (photo copyright © by <http://www.schaakcomputers.nl/>)

**That's Right!
It's you against the computer.**



Made in U.S.A.

Three Levels of Play

CHESS CHALLENGER™ is an exciting and suspenseful electronic game for beginning, average and advanced chess players to match their skills against a computer.

It incorporates a sophisticated, reliable decision-making microprocessor as its brain. This micro-computer's high-level thinking ability enables it to respond with its best possible counter moves, just like a skilled human opponent. If you're not careful, you'll wind up checkmated!

CHESS CHALLENGER™ is ideal for sharpening skills and teaching the game of chess. 100% solid state for years of trouble-free use.

- I LOSE**—Lights when computer admits defeat and is in checkmate.
- CHECK**—Lights when the computer has you in check.
- TO WINDOW**—Displays the new position to which you have chosen to move your piece.
- FROM WINDOW**—Displays the position of the piece you want to move (your starting position).
- ENTER**—To enter your move into the computer.
- CLEAR**—To clear an unwanted move before pressing **ENTER**. (Also chess level key to determine difficulty at beginning of play).
- DOUBLE MOVE**—To be used for Castling and for En Passant. (Also, to determine if game has light or dark pieces at beginning of game).
- RESET**—Starts the game— will cancel memory.
- KEYS**—Designates Rank and File board moves.

ADDITIONAL FEATURES!

- SELECTION OF OFFENSE OR DEFENSE
- CASTLING AND EN PASSANT
- POSITION VERIFICATION BY COMPUTER MEMORY RECALL
- SOLVES CHESS PROBLEMS

The American version of the brochure was more extensive than the Dutch and also provided information about the operation of the Fidelity Chess Challenger 3.

(photo by Rob van Son) (photo copyright © by <http://www.schaakcomputers.nl/>)

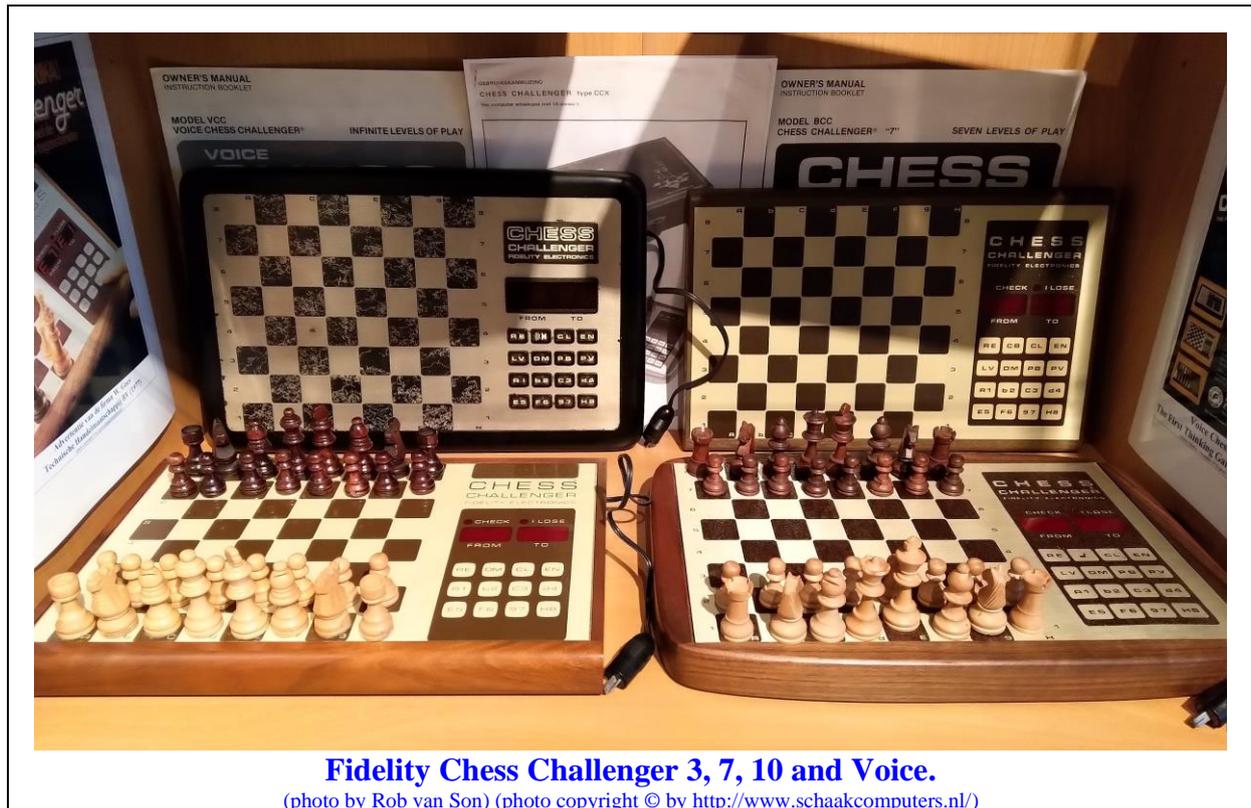


Fidelity Chess Challengers 3 & 10 fight each other in an exciting game. The position is reached after White's 11th move. Challenger 10 has played Ke1-f2 and excludes the castling. This version 10 refused to castle in every game and was therefore later called Challenger 10A. The B-version of this model could simply castle again. Challenger 3 indicates a castling queenside by means of three zeros in the display. The '3' was finally checkmated by the '10' on the 38th move.

(photo by Rob van Son) (photo copyright © by <http://www.schaakcomputers.nl/>)

Extreme difficult levels...

The search depth of the Chess Challenger 3 could reach 3 ply on level 3. On level 1, it calculated 1 ply, on level 2, 1 ply brute force and 1 ply selective search and on level 3, it calculated 1 ply brute force and 2 ply selective search. A miniature opening book was present, but consisted of the moves e4, d4 and with black of e5 and d5. In this model, thinking in the annoying English notation has not quite died out yet, nor have the illegal moves. If you let him play with white, the device indicates e7-e5 as the first move. You may be surprised to learn that with the white pieces at the top of the board, the English notation refers to the move P-Q4 (Pawn to Queen's 4), which translates into algebraic notation as the move d2-d4.



In my Chess Challenger manual, under the heading of castling, it says: "Note that the computer can make a mistake here. Since it castles as quickly as it can, it will do so even if it is in check. This can be corrected by pressing DM and instructing the computer to return the king and rook to their original positions. Since the computer can castle only once, it will then answer with another move!" The Chess Challenger 3 became the first official chess computer in Europe, also available in the Netherlands from September 1977.

The "extremely difficult level 3", as it was called in the advertisements, soon caused much disappointment among chess players who thought that, with the help of this computer, they would become stronger chess players. The machine was still playing far too weakly, but Fidelity kicked off an unstoppable advance of the chess computer. Sid Samole found a gap in the market with his Chess Challengers. Fidelity Electronics already had several offices in Chicago and wanted to expand its activities in this area even further. They chose Miami, located in the warm climate of the state of Florida. In 1978, they built a very large head office there, where 1250 people were already working by the autumn of 1980.

Ron Nelson and Bill Fink

Ron Nelson was appointed technical director and a new programmer, Bill (William) Fink, was hired to support the development of new improved versions of the Chess Challenger 3. In July 1978, Chess Challenger 10, named after its ten levels of play, was released. Version 10 was soon renamed version 10 A when it turned out that this computer refused to castle! Improved versions 10 B and C followed in November 1978 and February 1979 respectively. In May 1979, the seven-level Chess Challenger 7 appeared, which was succeeded by the more powerful Chess Challenger Super 7 in August 1980. In August 1979, the first chess computer with a voice appeared on the market, the Voice Chess Challenger, followed in September 1980 by the improved B-version, the so-called advanced version. In the autumn of 1980, the Chess Challenger Grandmaster Voice was launched, and in the spring of 1981, the Decorator Challenger also appeared on the market. Two very luxurious models with gigantic dimensions and equipped with the strongest program of Ron Nelson's Voice Sensory Chess Challenger.



What do the listed Chess Challengers made in the late seventies and early eighties have in common? Ron Nelson wrote the programs, but for the upgrade to the Chess Challenger 10 (UCC10) and the Voice Chess Challenger, with the assistance of programmer Bill Fink. All moves must be typed manually using the letter/number keys. These computers do not yet have sensor fields! As from CC10, they run on a Zilog 80-A processor with 4 MHz speed. They cannot yet think in the opponent's time, the so-called permanent brain. The versions 10 and 7 have the same opening book of no less than 80 ply (half moves) and make beeps when entering the moves and when displaying the countermove. Version 10 and the Voice both have 10 chess levels. They can calculate up to 6 ply deep. They have a rating of approximately between 1200 and 1400 ELO points.

Eyelets in the display...

Computer überlegt
Angriffszug



Computer überlegt
Verteidigungszug



During the thinking process you see four little eyes in the display moving up and down. Historian Hein Veldhuis once told me the following anecdote: "If the eyes are at the bottom of the display, he is thinking of an attacking move. If they are at the top of the display, the computer is thinking of a defensive move."

Differences between the models

What differences exist between these models? The Chess Challengers 10 A and B are made of beautiful light-brown wood and stand out because of their rounded corners. This gives them a very specific appearance. The Chess Challenger 7 is the cheaper, entry-level plastic-made model and plays somewhat stronger and more aggressively than its predecessors.



Fidelity Chess Challenger 7 in an exclusive and original luxury case.

(photo copyright © by <http://www.schaakcomputers.nl/>)

The Voice Chess Challenger and Telesensory systems

The Voice Chess Challenger, which comes in a beautiful black wooden case, can pronounce its moves in a loud and icy electronic voice. The technology behind this voice came from the company "Telesensory systems" that had already invented talking calculators for the blind. Blind people could now play chess with the computer. The size of the Voice program was much larger than that of its predecessors, and the extra capacity for the speech chip was partly used. The Voice has a large opening book of no less than 1250 ply. You can even choose your own favourite opening! The Voice came in four languages: English, German, French and Spanish.

Sensor fields

In the autumn of 1980, the appearance of the Fidelity machines was drastically changed. The new models could also be easily operated using sensor fields, which meant that all the difficult keypad work was no longer necessary. There were still very successful years ahead for Fidelity. By bringing in the promising programming duo Kathe and Dan Spracklen, they won the world title of the World Microcomputer Chess Championships four times: London 1980, Travemünde 1981, Budapest 1983 and Glasgow 1984. It resulted in the production of many strong playing and well-selling Fidelity chess computers. Unfortunately, at the end of the 1980s, the success came to an end due to strong competition from the Munich firm Hegener and Glaser (Mephisto) and the high dollar exchange rate. In 1989 Fidelity was taken over by Hegener and Glaser. The takeover did not improve the poor sales, so that by the end of 1992 the curtain fell definitively on Fidelity Electronics.

Deep Voice in the User (Gebruikers) Tournament

I decided to participate with my old Fidelity Voice Chess Challenger from 1979 in the 4th CSVN chess computer user tournament, held on 27 and 28 October 2001 in the city of Leiden. Of course, I had to consider that I might lose all games and that I would have to deal with any psychological damage this might cause. But, who knows, maybe someone would give me half a point, just like I managed to do with my Boris Sargon in the 2nd user tournament. Moreover, it is a great opportunity to give once again the very antique among the chess oldies a chance to prove themselves again.

In my interview with collector Luuk Hofman (Selective Search 160, June/July 2012), he told me something special about his unit: "The Voice Chess Challenger had a hard-nasal voice that you could turn off. Because I often played chess late at night, I didn't want the loud sound to wake my wife and children. Turning off the voice was an option, but then the fun was less. In this case also, Wegam provided the solution by building in a special resistor and an adjusting screw at the rear of the device. This screw does not stick out at the bottom, and with the aid of a screwdriver, the volume of the voice can be set. After these adjustments, I considered the Voice as my most favourite chess computer, not just because of his controlled voice, but also because of his human playing style. I played about as strong as the Voice. According to historian Hein Veldhuis, no one else on this planet is in the possession of this kind of converted Chess Challengers!"



Luuk's Voice Chess Challenger with the adjusting screw to temper the voice!

(photo by Rob van Son) (photo copyright © by <http://www.schaakcomputers.nl/>)

Organiser Ries van Leeuwen has said it many times: "Dear members, join the user tournament, because participating is much more important (and pleasant) than winning!" He is absolutely right, so I decided to sign up with the Voice and two other computers, which would be operated by friends. The Voice looks very nice in my showcase at home but seeing it in action is even more fascinating! To my delight, it seemed that my thought was further supported by the board by establishing an additional prize: 'The poodle prize.'

To start calmly, my Voice was classified with black against the Tasc R40 in the first round. I had barely finished my first cup of coffee when I handed in my scoresheet to Ries van Leeuwen: 1-0. I had planned to let the Voice use his time optimally. For example, I let him play on level 5 in the first half hour. This level is referred to in the manual as superior and uses an average of 2½ minutes per move. After that he played for 15 minutes in level 3 (35 seconds per move), 10 minutes in level 2 (15 seconds per move) and the last 5 minutes in level 1 (5 seconds per move).



Fidelity Voice Chess Challenger

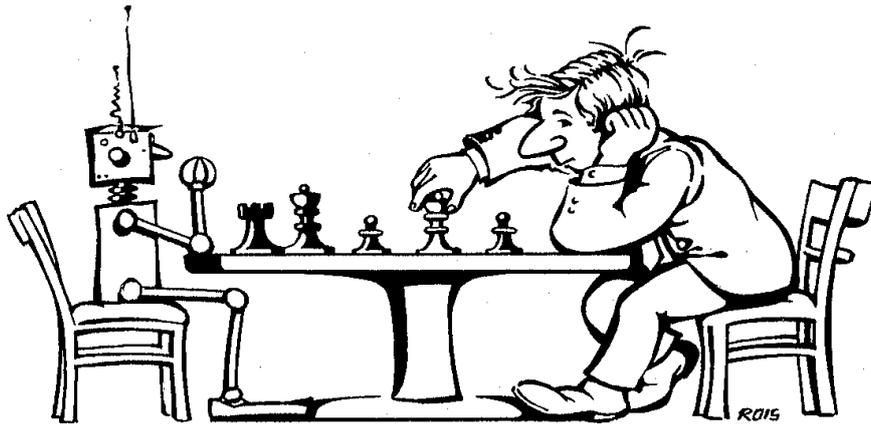
(photo by Rob van Son) (photo copyright © by <http://www.schaakcomputers.nl/>)

The time schedule set by me did not bring any luck and so I lost in round 2 of the Mephisto Montreux and in round 3 of the Mephisto MMV. The Voice and its operator continued to fight in good spirits and so we could compete against another museum computer in round 4, the Fidelity Chess Challenger Sensory 9 from 1982. One would think that the two Fidelity computers would be evenly matched, but that a few years (1979-1982) would make such a difference, I had not imagined.

Chess Challenger Sensory 9 – Voice Chess Challenger (4th CSVN Gebruikers, round 4)

1. Nf3 d5 2. c4 Nf6 3. cxd5 Qxd5 4. Nc3 Qe6 5. d4 Bd7 6. Bf4 Na6 7. e3 c6 8. Ng5 Qf5 9. Qb3 Bc8 10. Bxa6 bxa6 11. Qxf7+ Kd7 12. 0-0 h6 13. Nf3 Rg8 14. Ne5+ Kd8 15. Nxc6+ Kd7 16. Qc4 Ke8 17. Nb8 Qe6 18. d5 Nxd5 19. Nxd5 Kf7 20. Nc6 Kg6 21. Qc2+ Kh5 22. Ne5 Qxd5 23. Qg6+ Kh4 24. Bg3# checkmate. 1-0.

The last round of the first tournament day was over. Since I did not have a machine with sensor fields or read contacts at my disposal, like the other participants, I had to key in all the moves one by one. Making mistakes was out of the question, because after typing a wrong move, confirmed by the enter button, there was nothing left to correct. This meant extreme concentration, but luckily, I had trained myself at home not to make input errors.



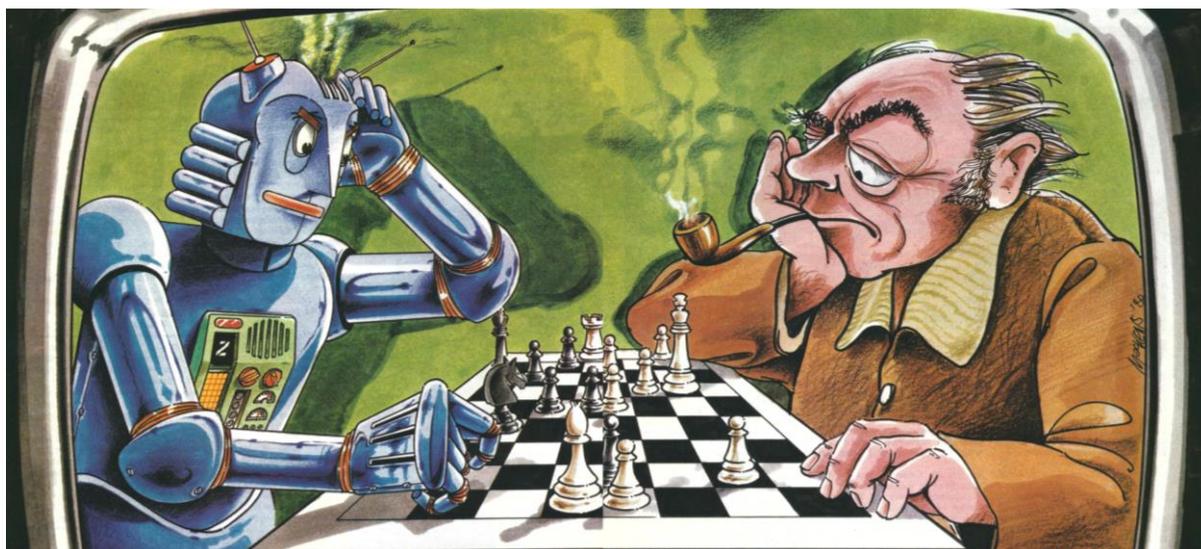
Rob at the 4th Gebruikers (User) tournament with his Fidelity Voice Chess Challenger.

(photo by Rob van Son) (photo copyright © by <http://www.schaakcomputers.nl/>)

The next morning, the Voice and his operator were fully fit and on time for the fifth round. Would it still work today, that one draw for that half point? Some participants said to me that it would be better if I stayed at zero points to still have a chance of winning the poodle prize. But no, we didn't give up and went for it 100% again! In the fifth round, my Voice was classified with white against the Mephisto Magellan.

Voice Chess Challenger – Mephisto Magellan (4th CSVN Gebruikers, round 5)

1. d4 Nf6 2. c4 e6 3. Nf3 d5 4. Qa4+ Bd7 5. Qc2 dxc4 6. Qxc4 Bc6 7. Nc3 Nb-d7 8. Bf4 Nb6 9. Qd3 Nb-d5 10. Nxd5 Nxd5 11. Bd2 Nb4 12. Qc4 Bd5 13. Qb5+ c6 14. Qa4 b5 15. Qd1 Be4 16. Rc1 Nxa2 17. Ra1 Nb4 18. Rc1 Bxf3 19. exf3 Qxd4 20. Bc3 Qb6 21. Bd3 Rd8 22. Bxb4 Bxb4+ 23. Ke2 c5 24. Qc2 c4 25. Bxh7 Rd2+ 26. Qxd2 Bxd2 and White gave up. 0-1.



I noticed during this game that the Voice exceeded his thinking time (per move) several times, displaying a number of ones, twos, and threes during the thinking process. He apparently made extra deep calculations this time to make up for his losses in the previous four rounds. His operator had time enough to think too and gave the Voice a new name: "Deep Voice." Unfortunately, there were too many years and rating points between the two machines, so we were able to add a zero again. In the sixth round against one of my own computers, the Mephisto Milano, the Voice was even mated on the 24th move! A timely offer of coffee, accompanied by a draw offer, was to no avail. The former owner of my Voice also managed to knock him off the board in round 7 with his Mephisto Lyon 68020. So still zero points from seven games! I won the poodle prize, a beautiful book about the Polgar sisters. And all that thanks to my 22-year-old Voice Chess Challenger.

In spite of its weak play, the old machine gave me back the feeling that many chess computer lovers probably also experienced in the late seventies: "The miracle of the chess playing machine that always wants to play chess against you, even if it loses seven games in a row!"

Rob van Son, December 2001, April 2021

This article by author Rob van Son first appeared in the Dutch CSVN magazine "Computerschaak" of February 2002. In January 2010 it appeared online.

See: http://www.schaakcomputers.nl/hein_veldhuis/database/files/02-2002,%20Computerschaak,%20Rob%20van%20Son,%20De%20schaakcomputer%20daagt%20u%20uit!.pdf

See also the interview with collector Luuk Hofman, "Luuk's love for chess computers": http://www.chesscomputeruk.com/SS_160.pdf (Selective Search nr. 160 from page 12).

In March 2021, Hein Veldhuis asked Rob van Son if an English version of this article could appear. From a historical point of view, I found it very worthwhile! Rob was happy to cooperate and so this English version came into being.