

09-1981 [E-1751] Toytronic - Computer Chess

The Toytronic Computer Chess is technically identical to the TEC Schachcomputer, although I do have the impression that this model is somewhat rarer. As we know, the chess program was written by Peter Jennings. As far as I know, this chess computer has the Microchess 2.0 chess program on board. However, opinions differ on this, as some websites refer to Microchess 1.5. Fortunately, I came across a blog that probably has the real answer. So it's a matter of replaying the games published there and drawing your own conclusions. I'm not going to do that myself due to lack of time. But the more I read about Microchess, the more I think that Microchess 1.5 is the real version that is in this chess computer. Could Hans-Peter Ketterling have been wrong after all?

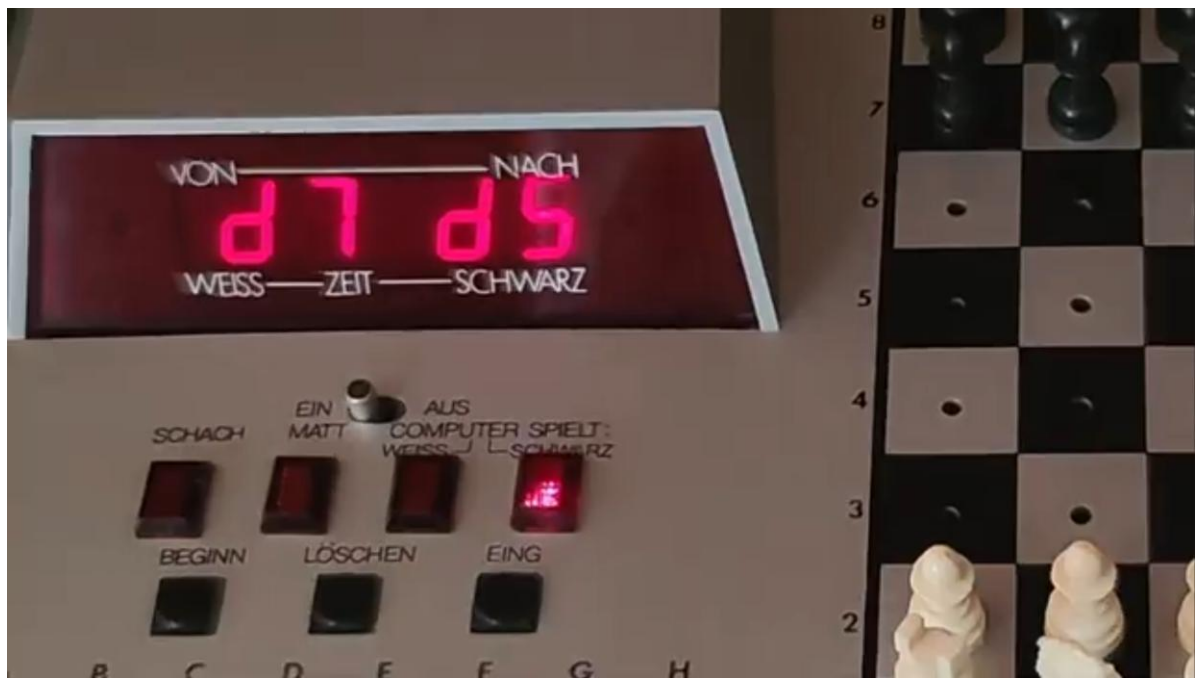
Hans-Peter Ketterling Rochade (November 1981)

... Nicht alle Neuheiten sind auch welche, hierfür ist der Schachcomputer TEC, der seit einiger Zeit im Bertelsmann Lesering für DM 278,- angeboten wird, ein Beispiel. Der Computer bietet ein integriertes Steckschachspiel und ein eingebautes Netzteil. Beim Einschalten Läßt er eine kurze Tonfolge erklingen, die sofort Seine Herkunft verrät. Er kommt aus Hong Kong und enthält das schon sattem bekannte MICRO CHESS 2.0, das auch im CHESS MATE von Commodore und in den CHESS CHAMPIONS MK II a und II b von Novag enthalten ist. TEC ist schachlich und in der Bedienung mit den drei anderen Computern identisch und eine nähere Beschreibung erübrigt sich deshalb, er ist spielerisch wenig anspruchsvoll und damit als Einsteigermodell einzustufen. ...

Quelle: 11-1981, Rochade, Nr. 208, S.10,
Hans-Peter Ketterling: Computer auf dem Vormarsch – VIII. Teil.



Not a very attractive image, but it clearly shows that it is the Toytronic Computer Chess



The image is not of the Toytronic Computer Chess but of the TEC Schachcomputer

Microchess 1.5 versus Dark Horse

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When the Second World Computer Chess Championships were held in Toronto last August (see January 1978 BYTE, page 108), the opportunity arose to challenge one of the best chess programs in the world to a friendly match against my microcomputer. A match was arranged between Microchess version 1.5 and Dark Horse for the day after the tournament.

Dark Horse is a program written by Ulf Rathman of Stockholm SWEDEN. It is written in FORTRAN IV and occupies 24 K

words of programmable memory with 60 bit words on a CDC 6600 computer. On average, it is capable of analyzing 12,000 positions per move made. In addition, it utilizes its opponent's time by preparing replies to expected moves. Although Dark Horse is considered to be a small program by classical mainframe computer chess standards, its strategy is efficient and it finished in sixth place at the World Computer Chess Championships.

Microchess is a program I wrote for the

White: Microchess Black: Dark Horse

It was decided by a coin toss that Microchess would play white. Since neither program makes use of an opening book, the opening is a little unorthodox. However, by move 3 the position looks like a normal opening.

1. N-QB3	P-K3
2. N-KB3	N-QB3
3. P-K4	N-KB3
4. P-K5	N-KN5
5. P-Q4	P-Q4
6. B-KN5	B-K2
7. BxB	QxB
8. B-K2	Q-N5
9. R-QN1	Q-O
10. P-QR3	Q-K2
11. O-O	P-QN3
12. P-QR4	Q-N5
13. P-KN3	B-N2
14. B-N5	P-QR3
15. N-QR2	Q-QR4
16. BxN	BxB
17. P-N3	P-QN4
18. O-K1	QxQ
19. R(B1)xQ	FxP
20. N-N4	FxP
21. Nx8	FxP

Dark Horse evaluates the pawns captured plus the resultant pawn on the seventh rank as more valuable than the lost bishop.

22. N-K2ch	K-R1
23. R(N1)-B1	R(B1)-K1
24. N-B6	K-N1
25. RxP	P-QR4
26. R(K1)-K2	P-R5
27. N-N4	R(K1)-QB1
28. R-N2	P-O8

29. N-Q3	P-R6
30. R(N2)-Q2	PxP
31. NxP	R-B5
32. N-B4	P-R7

Dark Horse, which prints out the expected continuation, expected 33. RxP RxR, 34. RxR RxN, 35. R-K2, winning a knight for the pawn. It did not foresee 35. R-R8 (mate in one) because it truncated the analysis at 6 ply on this continuation. A search to 9 ply would be necessary to determine the threat.

33. P-B3 ...

Microchess did not take the pawn because it expected the same continuation that Dark Horse projected, with the loss of a knight. The threat of P-R8ch was not evaluated correctly due to a bug in the program. This blunder resulted in a loss for Microchess.

33. ...	P-R8 (Q)ch
34. K-N2	NxP (K5)
35. N-N3	Q-B6
36. K-R3	RxN
37. PxR	QxPch
38. K-R4	Q-N5 Mate!

Microchess took 47 minutes while Dark Horse required only 11 minutes of processor time for the game. Part of this difference is explained by Dark Horse's ability to compute responses on its opponent's time.

Although Microchess was defeated by Dark Horse, it was not as one-sided a game as might be expected given the difference in computing power. Further improvements in Microchess will probably bring it close to the playing level of Dark Horse and other programs in its class, but at a slower speed.



Position after 32. ... P-R7.

KIM-1 in 1976. Commercial versions are available for the KIM-1, and a translated version is available for the 8080. Version 1.5 is an extended version of the original program. It occupies 2.5 K of programmable memory and runs on a KIM-1 with expansion memory. Although it plays better chess than the first version of Microchess, it is incomplete and requires further development.

Because of the complexity of chess analysis, time becomes an important factor both for micro and mainframe programs. One expected solution to the problem is the use of multiple microprocessors to process portions of the analysis in parallel. Such a distributed network can reasonably be expected to play as well as Chess 4.6, if not better, provided the heuristics used are equally powerful. I would not be surprised to see this type of equipment in use at the Third World Computer Chess Championships in 1980 to be held in Tokyo and Melbourne.■

The following programs are available from MicroWare Ltd, 27 Firstbrooke Rd, Toronto, Ontario M4E 2L2 CANADA:

Microchess, A Chess Playing Program for the 6502 processor. Price: \$13.

Microchess, A Chess Playing Program for the 8080 processor. Price: \$18.

Source: Byte Magazine – March 1978

A brief description

- Keypad model
- Info LCD
- 8 Levels
- Knows 32 book openings
- Verify function
- Set up function
- Knows castling & en passant rules
- Rejects illegal moves
- Built-in adapter
- Dimensions: 35 x 22.3 x 2.1 cm (excluding display)

Programmer

- Peter Jennings (aus Toronto, Kanada)
Toytronic Computer Chess has Microchess 1.5 on board!?

Release

- September (?) 1981

Technical specifications

- Microprocessor: MOS MPS 6504
- Clock frequency: 1 MHz
- Program memory: 5 KB ROM
- Working memory: 320 Byte RAM

Playing strength

- At level 8 (highest level) approx. 1100 (?) according to the Elo rating system

Related

- TEC Schachcomputer
- Commodore Chessmate
- Novag Chess Champion MK II (A)
- Novag Chess Champion MK II (B)

Internal & External Links

[https://www.schaakcomputers.nl/hein_veldhuis/database/files/09-1981%20\[D-2451\]%20TEC%20-%20Schachcomputer.pdf](https://www.schaakcomputers.nl/hein_veldhuis/database/files/09-1981%20[D-2451]%20TEC%20-%20Schachcomputer.pdf)

TEC Schachcomputer

<https://www.chess.com/blog/BenRedic/retro-computer-chess-part-3-bringing-it-home>
About Commodore Chessmate and Microchess 1.0, 1.5, and 2.0 versions

https://www.chessprogramming.org/Peter_Jennings

More about Peter R. Jennings