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Chess Software Shootout

THIS ISSUE:

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Early '95 Review

by Larry Kaufman

Since our last issue, there have not been any earth-shaking developments in computer chess, but the hardware keeps getting faster and the programs continue to improve, though not in a dramatic way. The annual Aegon tournament showed a distinct improvement in the programs' results over previous years, and there is a continuing flow of IM and GM level results for various programs under a variety of conditions. It can no longer be denied that the best programs are on a par with strong Grandmasters in fast games, with mounting evidence that even at standard tournament time limits the machines are able to compete on fairly even terms with at least the lower tier of GMs.

In the dedicated commercial market, the trend is towards getting strong machines made at reasonable prices, rather than to make super-strong expensive models. One reason for this is that good PC programs on fast Pentium computers will outperform any dedicated model in existence, and with boards now available to attach to the PC, there is not so much reason for the big spender to choose the dedicated route, though some will still do so for a variety of reasons, such as greater ease of use, portability, computer-phobia, or special features. Nearly all Expert (or stronger) level models coming out now use either the Hitachi h-8 processor or one of the ARM Risc processors, both of which seem to offer very good bang for the buck. Novag seems to be filling the void left by the demise of Fidelity, in terms of offering strong machines at very reasonable prices. The new Jade II and Zircon II are stronger than any other comparably priced models have been in the past, or we can say they are less expensive than any comparable strength models have been. Excalibur has become a major player in the low end market, while Saitek (now including Mephisto) remains by far the largest company worldwide in this business, with the Travel Champion 2100 its latest model of real interest to the serious chess player.

In the supercomputer arena, Star-Socrates is now running on an Intel machine called the Paragon with 1800 RISC processors, but it lost to IBM's Deep Blue in the first round of the World Computer Championship in Hong Kong, in progress as I write this. There are some other computers also using huge numbers of processors. My impression is that the use of such large numbers of processors is not as beneficial as I would have expected, although it certainly helps quite a bit.

Not much is new with PC software; apparently all the upgrades and new programs try to come out in the fall, in time for Christmas sales. There is another board available now for use with PC software.

As in the last issue, I (Larry Kaufman) am responsible for all unattributed articles except those concerning PC software (and devices for use with PCs), which articles are by USCF Master Nick Schoonmaker.

Sorry for the long time since our last issue, but there just wasn't enough new to warrant an earlier issue.

Tournaments

by Larry Kaufman

Now that there are some autoplayers allowing for automatic playing of games between programs, more computer vs. computer tournaments with large numbers of rounds are being held. One such event was held in Sweden at 5" per move (blitz) level, in which each of ten PC programs played forty rounds (twenty with each color) against each of the other nine, making a 360 round event! All ran on 486/66 MHz machines. The results were a total triumph for Richard Lang's "Genius" programs, always known to excel at blitz, and a fine showing for Fritz 3, which shared first with Kasparov last year in a strong GM blitz tourney. Genius 3 scored 241, Genius 2 230, Genius 1 216, Fritz 3 206.5, Hiarcs 3 186, W Chess 182, Rebel 6 161.5, MChess Pro 4 144.5, MChess Pro 3.5 139.5, and Kallisto 93. The poor showing of the two versions of MChess is a bit surprising.

Another computer event of some interest is the annual Welser tournament, held in January of '95. Twelve programs played a round robin at tournament level. Unfortunately the pc programs ran on unequal hardware, so the results are only meaningful if the hardware is taken into account. Fritz3 won with 8.5 out of 11, but it was one of the few to run on a Pentium 90. MChess 4 took second at 8 on a Pentium 60. Genius3 was third at 7.5, but this was achieved with only a 486 dx2 66. Rebel 6 on a Pentium 90 shared fourth at 6.5 with Hiarcs 3 on a Pentium 60, while Genius2 on a 486 dx2 80 shared sixth with WChess on a 486 dx2 66 at 6 points. Chessmaster 4000 on Pentium 60 was next with 5.5, then Kallisto on Pentium 90 with 5, then the TASC R30 at 4.5, then Greif on 486 dx4 100 at 1.5, and finally Milobarus on Pentium 90 scored just a half point. Allowing for the hardware, I would say Genius 3 did the best, then MChess Pro, then Fritz3, and then WChess.

As for results in human competition, Fritz 3 played in a FIDE rated international tournament for masters at Bad Godesburg and made an even score (5.5 out of 11) against an average opposition of over FIDE 2450. This is about the same as its British rating adjusted for the

hardware, a Pentium 90. This would be good enough to count as an I.M. norm (if FIDE allowed computers to earn titles) except for the fact that since Fritz has no FIDE rating, it pulls down the tournament average to below the required 2450+. In other words, if Fritz had first obtained a FIDE rating close to its result in this event, then it would have earned an I.M. norm here. In any case, it is clear that the top few programs running on Pentium 90 machines are of at least I.M. strength at 40/2. Now that Pentium 120 machines are making their appearance, it is possible that the strongest program (currently Genius 3) may already be of Grandmaster strength at 40/2, having already proven itself a strong Grandmaster at game/25.

Last year you may recall that Mephisto Genius 3 on a Pentium 90 MHz computer defeated Garry Kasparov in London by 1 1/2 to 1/2 in a 25' per side match. A rematch was held recently on German t.v., with Kasparov winning this time by that same score. The time limit and match rules were the same as in London, but this time Genius ran on a 120 MHz pentium machine. So after four games, they are even. It was reported that in the one game that Kasparov won, he was in trouble but the computer underestimated an attack on its king.

Another human pairing at 40/2 was a single game played in Maryland between Grandmaster G. Sagalchik and Star-Socrates, a version of Socrates adapted to run on an Intel "Paragon" computer with 1,800 processors. Although the program was still in its early stages, it won the game after Sagalchik sacrificed unsoundly in a promising position.

In Gothenburg, Sweden, an Action chess match (game/30') was held between a team of four PC programs running on 486 dx2 66MHz computers and eight players with Swedish ratings ranging from 2192 to 2472. The results were an overwhelming victory for Genius 3 --- 7 1/2 out of 8 for a 2737 performance rating, and respectable showings for the other three programs. MChess Pro 4 and Fritz3 each scored 5 1/2 for a 2443 performance rating, while WChess scored 5 for a 2395. To convert these ratings to USCF equivalents, I am not sure whether to recommend adding 85 points (my current estimate of the USCF vs. FIDE gap), 180 points (my current estimate of the USCF vs. "Ply" magazine gap), or perhaps something in between. In any case, it's safe to say that Genius performed like a World title contender, and the others like strong IMs. All this without even using Pentiums!

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Aegon Tournament

by Larry Kaufman

The tenth annual Aegon (Netherlands) human vs. computer event ended in a victory for the computers this time, by a score of 155-132. In recent years the matches have been extremely close, even tied, so the computers definitely showed improvement.

The performance rating of the top ten PC programs jumped 124 points over last year (according to Marty Hirsch). The prime reason was probably the fact that Pentium 90 MHz computers were used this year (vs. last year's 486/66), which should be worth about 65 points, but the software was clearly improved as well. Another factor may have been a mild speedup in the time limit. Instead of the previous game/2 hours, the time limit was game in 90' with 15" added to the clock with every move, which is perhaps 10% faster. This type of time limit is becoming very popular of late, for example on the Internet Chess Club. It insures that no move need ever be played in less than the specified number of seconds, but still allows the total time for the game to be estimated with reasonable accuracy. Although this method of play is widely credited to Bobby Fischer (who has patented a chess clock based on the idea), I would like to state for the record that I (Larry Kaufman) introduced this idea around 1980 for use with a digital clock then being sold under the name "Micromate", and Micromate clocks were sold with instructions on how to set them for "Accumulation" as I called it, with credit to myself as the inventor. Another similar method also likely to gain widespread popularity is the "Delay", in which the game must be finished in a fixed amount of time, but with the clock delaying a specified number of seconds before starting to tick after a move is made. This method has similar merits, and is attributed to Grandmaster David Bronstein (who won the Aegon event a couple of years ago).

Anyway, first place went to the Dutch Grandmaster John van der Wiel, with 5 1/2 out of 6. But incredibly, there was a nine way tie for second at 5-1, of which seven were computers!! In order of tournament performance rating, they were: Chess Genius X 2662, M-Chess Pro 2652, Hiarcs 2631(which finished first on tiebreak), HiTech 2600, Socrates 2487, Mephisto PC-Board A. (same as Chess Genius X, but with a board attached) 2473, and W-Chess 2424. Remember these are European ratings, so we should add perhaps 100-150 points for USCF equivalence. The only humans to score 5 points were IM Gert Ligterink and GM Yasser Seirawan. At 4 1/2 - 1 1/2 we find GM Roberto Cifuentes and IM Hans Ree but no computers. At 4-2 were Quest (related to Fritz 3) 2489,

Rebel 2403, Fritz 3 2378, Chessica (Fritz 3 for Windows) 2367, Arthur 2341, Zarkov 2336, Virtua Chess 2305, Nightmare N 2285, Kallisto 2284, Zugzwang (running on 96 Power PCs) 2237, and Junior 2179, along with GMs John Nunn and David Bronstein, and IMs Hans Ree and Sofia Polgar, and Nico Kuijf. At 3 1/2 came Mephisto Genius 68030 2445, Hector 2 2402, The King 2.5 2262, Mephisto Montreux 2235, Schach 3.0 2228, Schaakmeester 2.0 2219, Gandalf 2180, and Grandmasters Larry Christiansen and Zsuzsa Polgar plus several Masters. With 3 points were Isichess 2375, Now 2297, Chess-Master 4000 2290, Mephisto Berlin Pro 2247, and Nightmare D, Camel, and Pandix, along with IM John Donaldson and other masters. At 2 1/2 were LChess 2109, Diogenes 2038, and Saitek Brute Force 2023. At 2 points we find Novag Sapphire (2066), Saitek President (2032), Chess System Tal 1984, Frenchess 1979, Dappet 1928, and Centaur 1870. Then at 1 1/2 were Check Check 1958, Saitek GK 2100 1939, and Mirage 1870. At the tail end were Bionic with one point (1737) and Ananon with none (1373).

As the event ended just days before my deadline, I don't yet have all the results of individual games, but some of the victories scored by computers over grandmasters include Quest beating Nunn, Hiarcs beating Seirawan, Virtua beating Bronstein, Hitech beating Christiansen, and MChess Pro beating Christiansen, Cifuentes, and Zsuzsa Polgar (!). M Chess Pro, Hiarcs and HiTech (much improved over last year reportedly due to bug fixes) all achieved results good enough to count as Grandmaster norms, while Chess Genius came close (combining the two results of Genius on Pentiums), although I believe six rounds is too short to actually count as such (aside from the detail that FIDE won't recognize norms by a computer.) I hope that next year the eligibility requirements are tightened to include only FIDE titled players, and only computers with enough memory for hash tables.

Quote From Aegon's Winner

John van der Weil
translated by Joost Buijs

"To my surprise I noticed that many collegue-GM's lost many games from the computers. I have to admit I don't understand that, and I think they made a big mistake by thinking they had to play chess against them. I have to admit, the activity we practiced the last week looked a lot like chess, but in reality it is a completely different game. I tried not to play chess, but I played against the computer and was fairly successful in it. Maybe because I'm pretty good in games."

Aegon's Nightmare

Nightmare's Debut On The 10th Aegon Human/Computer Tournament.

by Joost Buijs

From 26 April till 3 May 1995 the 10th Aegon human/computer tournament was being held. The human side was stronger than ever before, eight grandmasters were playing, among others John Nunn, Yasser Seirawan, Larry Christiansen, John v.d. Wiel, David Bronstein etc. Further some IM's and strong Dutch players participated. At the computer side important programs like Hitech and Zugzwang participated, both running on commercial hardware. And of course all commercial top programmes were present, mostly working on an Intel Pentium-90. The organiser of the tournament, Cock de Gorter, had several times asked me if it would be possible to participate with my programme 'Nightmare'. Previous years I refused, because I thought that the program was much too weak to play such strong players. This year I decided to join, for two reasons. First: it was the tenth tournament, and it could be the last one; second: Nightmare had been improved a lot in the last year, and had now a rating of appr. 2280 on a Pentium-90. Bart Goldhoorn, who maintains the opening files for Nightmare, did improve some weak points here with the hope to make the program even stronger. And at last I tried to remove the last bugs from the program before the tournament started. If everything succeeded, I'll let the readers of this article decide. The first round was a big hit right away. Nightmare did have to play Hans Ree, one of the strongest grandmasters. I'll have to confess that this bothered me more than it did to my program. But after all, it appeared that a grandmaster is only a human being, too! This game was a draw on my proposal. In the final position Nightmare did have a clear advantage, but I knew the way it handled an ending ... And to play a draw in the first round against a grandmaster was much more than expected. Vlastimil Hort who looked at the game afterwards told me that Nightmare played like a grandmaster and that he couldn't have seen in the playing that a computer was at the board. The second round we had to play Wim van der Pol, rated only a poor 1973. Easy win, I thought, but how hard reality proved to be. This game was another proof of how programs do have problems with certain kind of Kingside-attacks. If this problem will ever get solved remains the question. The hardware will be ten to twenty times faster in about a year or five, so the programs will look even further. I think they will hold these kinds of positions by then. Also it will be possible to improve the evaluation-function. The best game

Nightmare played was his game against Michael Hovink in the last round. After an equal opening and mid-game the program suddenly gets tactical chances, and makes the point without mistakes. To us it was a fine tournament. Nightmare made 4 out of 6, and a tpr of 2285. The computers won from the humans with 155-132. Till next year?

Aegon Round 1- Leiden
White: Nightmare N
Black: Hans Ree (2435)

1. e2-e4 g7-g6 2. d2-d4 Bf8-g7 3. Nb1-c3 d7-d6 4. Ng1-f3 Ng8-f6 5. Bf1-e2 O-O 6. O-O c7-c6 7. h2-h3 b7-b5 8. Be2-d3 Nb8-d7 9. Bc1-f4 Nf6-h5 10. Bf4-e3 Bc8-b7 11. a2-a4 b5-b4 12. Nc3-e2 c6-c5 13. c2-c3 a7-a5 14. c3xb4 a5xb4 15. Qd1-b3 Qd8-b6 16. Qb3-a2 c5xd4 17. Ne2xd4 Nd7-c5 18. Nd4-b3 Nh5-f6 19. a4-a5 Qb6-c7 20. Nb3xc5 d6xc5 21. Rf1-c1 Nf6xe4 22. Bd3xe4 Bb7xe4 23. Rc1xc5 Qc7-d6 24. Nf3-d2 Be4-b7 25. Ra1-c1 Qd6-e6 26. Qa2xe6 f7xe6 27. Rc1-c4 b4-b3 28. Be3-d4 Bb7-d5 29. Bd4xg7 Kg8xg7 30. Rc4-b4 Rf8-c8 31. Rb4-b5 Rc8xc5 32. Rb5xc5 Kg7-f7 33. f2-f3 1/2-1/2

Aegon Round 2 - Leiden
White: Wim van der Pol (Elo 1973)
Black: Nightmare N

1. e2-e4 e7-e5 2. Ng1-f3 Ng8-f6 3. Bf1-d3 Nb8-c6 4. Nb1-c3 Bf8-c5 5. Nc3-a4 Bc5-e7 6. c2-c4 O-O 7. b2-b3 d7-d6 8. h2-h3 Nc6-b4 9. Bd3-b1 Bc8-d7 10. Na4-c3 c7-c6 11. a2-a3 Nb4-a6 12. d2-d4 Qd8-a5 13. Qd1-c2 e5xd4 14. Nf3xd4 d6-d5 15. e4-e5 Nf6-e4 16. b3-b4 Na6xb4 17. a3xb4 Qa5xa1 18. Bc1-b2 Qa1-a6 19. c4xd5 f7-f5 20. b4-b5 c6xb5 21. Nc3xe4 f5xe4 22. O-O b5-b4 23. Qc2xe4 g7-g6 24. d5-d6 Be7xd6 25. Qe4-d5 Rf8-f7 26. e5xd6 Ra8-f8 27. Bb1-a2 h7-h6 28. Rf1-e1 b4-b3 29. Ba2xb3 Bd7-a4 30. Bb3-a2 Qa6-d3 31. Re1-e7 Qd3-d1 32. Kg1-h2 1-0

Aegon Round 6 - Leiden
White: M Hovink (Elo 2206)
Black: Nightmare N

1. e2-e4 e7-e5 2. Ng1-f3 Nb8-c6 3. Bf1-b5 a7-a6 4. Bb5-a4 Ng8-f6 5. Qd1-e2 b7-b5 6. Ba4-b3 Bf8-c5 7. O-O O-O 8. d2-d3 h7-h6 9. c2-c3 d7-d6 10. Nb1-d2 Rf8-e8 11. Rf1-d1 Nf6-g4 12. Rd1-f1 Ng4-f6 13. Bb3-c2 d6-d5 14. a2-a4 b5-b4 15. a4-a5 Bc8-g4 16. h2-h3 Bg4-e6 17. Rf1-e1 Qd8-d6 18. Nd2-f1 b4xc3 19. b2xc3 Ra8-b8 20. Nf1-g3 d5-d4 21. Bc1-d2 Rb8-b2 22. Re1-c1 Re8-b8 23. Ng3-f5 Be6xf5 24. e4xf5 Nf6-d5 25. c3xd4 e5xd4 26. Ra1-b1 Nd5-c3 27. Bd2xc3 d4xc3 28. Qe2-e4 Nc6-b4 29. d3-d4 Bc5xd4 30. Rb1xb2 c3xb2 31. Rc1-b1 Bd4xf2 32. Kg1xf2 Qd6-c5 33. Nf3-d4 Nb4xc2 34. Qe4xc2 Qc5xd4 35. Kf2-f1 Rb8-b5 36. g2-g4 Rb5-c5 37. Qc2xb2 Qd4-d3 38.Kf1-g139. c5-b5 0-1

1995 Aegon Tournament Games

Annotations by Nick Schoonmaker

The following six games are from the 1995 Aegon tournament.

Christiansen,Larry - M-Chess Pro 4.0
Aegon, 1995

1.c4 Nf6 2.Nc3 c5 3.Nf3 e6 4.e3 Nc6 5.d4 d5 6.a3 The game has transposed into an old line of the Semi-Tarrasch Defense which is regarded by theory as solid but passive for White. 6...cxd4 7.exd4 Ne4 8.Bd3 Nxc3 9.bxc3 dxc4 10.Bxc4 Be7 11.0-0 0-0 12.Bd3 b6 13.Qe2 Bb7 14.Bb2 [14.Qe4 g6 15.Bh6 Re8 looks tempting at first, but it will be difficult to pierce Black's King-side. Meanwhile, Black can quickly organize counter-measures against White's hanging pawns with natural moves such as ...Rc8, Qc7, and Na5.] 14...Na5 15.Ne5 Rc8 16.Rad1 Bd6 17.f4 This move seems a little too rigid. [17.Qh5 h6 18.Rfe1 looks like a better try. White's intention is to follow up with a Rook lift to the King-side via e3. Also, the black-squared Bishop can actively participate by way of the c1-6 diagonal, unhampered by a pawn on f4.] 17...Qc7 Black's position is very solid. His attacking chances now seem better than do White's. 18.a4 f6 19.Ng4 Bd5 20.f5 Nc4 21.Bc1 h5 22.Ne3 Nxe3 23.Bxe3 h4 24.h3 e5 Black has a strong initiative. 25.dxe5 Bxe5 26.Bd4 Rfe8 27.Qg4 Bh2+ 28.Kh1 Qg3 29.Qxg3 Bxg3 The key to this ending is Black's superior pawn structure and White's hemmed-in King. 30.Ba6 Rc7 31.a5 Ridding himself of a weak pawn and opening up a line for his Rooks. 31...bxa5 32.Ra1 Be4 33.Rxa5 Ree7 34.Kg1 Bc2 35.Rd5 Kh7 36.Rd8 Re1 37.Rxe1 Bxe1 38.Rc8 Re7 39.Rc5 Bg3 40.Bf2 Kh6 Black's King now enters the game while White's King can only witness the events to follow. 41.Kf1 Kg5 42.Ra5 Kf4 43.Ra1 Bxf2 44.Kxf2 Bxf5 winning a pawn and maintaining a strong initiative. 45.c4 Re5! This move shifts the attack to another weakness in White's position - the pawn at g2. 46.Bb5 Be4 47.Ra2 Rg5 48.Kg1 Ke3 49.Ba6 Kd4 50.Rb2 Ra5 51.Bb5 Ra1+ 52.Kf2 a5 53.Rd2+ Bd3 54.Kf3 Kc3 55.Rf2 a4 56.Kg4 a3 57.Kxh4 Rc1 58.g4 Rc2 59.Rf3 a2 60.c5 a1Q 61.Bxd3 Qe1+ 62.Kh5 Rf2 63.Rxf2 Qxf2 64.Bf5 Qxc5 M-Chess Pro 4.0 has played tremendously to this point. It is surprising that it is unable to win efficiently from here. 65.Kg6 Qe7 66.h4 Kd4 67.h5 Ke3 68.Kh7 Kf4 69.Kg6 Qf8 70.Bd7 Kg3 71.Bf5 Qg8 72.Bd7 Kf3 73.Bf5 Kf4 74.Bd7 Kg3 75.Bf5 Qh8 76.Bd7 Kf2 77.Bf5 Kf3 78.Bd7 Qh6+ 79.Kf7 Qh7 80.Kf8 Kg3 81.Bf5 Qh8+ 82.Kf7 Kf4 83.Kg6 Ke3 84.Bd7 Qg8 85.Bf5 Kf3 86.Bd7 Ke4 87.Bf5+ Ke3 88.Bd7 Kf4 89.Bf5 Ke5 90.Bd7 Kd6 91.Bf5 Ke7 At last the computer gets the idea. If the black g-pawn is captured when the Queen moves away, the white King will find itself in a mating net. 92.Be4 Qc4 93.Kf5 Qf1+ 94.Kg6 Qf4 0-1

M-Chess Pro 4.0-Cifuentes,Roberto

Aegon, 1995

1.e4 d6 2.d4 Nf6 3.Nc3 e5 4.Nf3 Nbd7 5.Bc4 Be7 6.0-0 0-0 7.Qe2 exd4 8.Nxd4 Ne5 9.Bb3 c5 10.Nf5 Bxf5 11.exf5 Qd7 12.Nd5 Rfe8 13.Rd1 Nxd5 14.Bxd5 Bf6 15.Qh5 Nc6 16.c3 Re5 17.Bf4 g6 18.Qh3 Qxf5 19.Qf3 Ree8 20.g4 Qd7 21.Bxd6 Kg7 22.Bxc5 Ne5 23.Qg2 Qxg4 24.Qxg4 Nxg4 25.Rab1 Red8 26.f4 Rac8 27.Bxa7 Ra8 28.Bb6 Re8 29.Bxb7 Rxa2 30.Bd5 Ra6 31.Bc5 g5 32.h3 Ne3 33.fxg5 Bxg5 34.Re1 f5 35.c4 f4 36.b4 Ra2 37.Bf3 Rd8 38.Rec1 Rdd2 39.b5 Rf2 40.Be4 f3 41.Bd4+ Kh6 42.Be5 Rg2+ 43.Kh1 Nf5 44.Bxf5 Bxc1 45.Rxc1 Kg5 46.Be4 Rge2 47.Rg1+ 1-0

Seirawan,Yasser - REBEL 6.0

Aegon, 1995

1.d4 d5 2.c4 c6 3.e3 Nf6 4.Nc3 e6 5.Nf3 Nbd7 6.b3 Bb4 7.Bd2 0-0 8.Be2 b6 [8...Qe7 9.0-0 Bd6! 10.Qc2 dxc4 11.bxc4 e5 12.Ng5! Re8 13.Bd3 is probably about equal, with chances for both sides. Butit would probably bedifficult for a computer to find the 'undeveloping' move, 9...Bd6.] 9.0-0 c5 10.cxd5 exd5 11.a3 Bxc3 12.Bxc3 Ne4 13.Bb2 Bb7 14.Nd2 White has a comfortable game with the two Bishops. If the center opens up, it will be to his advantage. 14...f5 15.Rc1 Qe7 16.Nxe4 fxe4 17.dxc5 bxc5 18.b4! obtaining control of the important d4 square and locking in Black's Bishop behind his own pawns. 18...c4 [18...cxb4?? 19.Rc7, winning] 19.Qd4 Nb6 20.f4! exf3? This opens up the position to White's advantage. All his pieces soon join in the attack. 21.Rxf3 Rxf3 22.gxf3 Rc8 23.Kf2 Rc6 This move seems to be a waste of time in view of White's reply. 24.Rg1 Rc7 25.Bd1 Nc8 26.Bc2 Nd6 27.a4 a6 28.Rg4 White has a tremendous advantage. All his pieces are nicely coordinated whereas Black's pieces are struggling to find positions that don't result in immediate collapse. 28...Qf8 29.Rf4 Qe7 30.Bc3 Qe6 31.Rg4 Ne8 32.Rg5 Rf7 33.Re5 Qd7 34.Bf5 Rxf5 35.Rxe8+ Rf8 36.Rxf8+ Kxf8 37.b5 axb5 38.axb5 Qc7 39.f4 Qe7 40.Ke2 Qd7 41.Kd2 Kg8 42.Qe5 Bc8 43.b6 h6 44.Bd4 Kh7 45.Kc3 Bb7 46.f5 Qf7 47.Qe6 Kg8 Black would lose the ending by force if Queens were exchanged here. [47...Qxe6 48.fxe6 Kg8 (48...Kg6? and the King is paralyzed. If it ever moves, White responds with e6-e7.) 49.Bc5 g5 49...g6 amounts to the same thing. 50.Kd4 Kg7 51.Ke5 c3 52.Kd6 c2 53.Ba3+- One of White's pawns will soon promote.] 48.Bc5 h5 49.h4 g6 50.Bd4 Qxe6 51.fxe6 Kf8 52.Bf6 Ba8 53.Kd4 Ke8 54.e4 dxe4 55.Kxc4 Bb7 56.Kd4 Kf8 57.Bg5 Ke8 58.Ke5 Bc6 59.Kd6 Ba8 60.Kc7 e3 61.Bxe3 1-0

M-Chess Pro 4.0-Polgar,Zsuzsa

Aegon, 1995

1.e4 c5 2.Nf3 Nc6 3.d4 cxd4 4.Nxd4 g6 5.Nc3 Bg7 6.Be3 Nf6 7.Bc4 0-0 8.Bb3 a5 9.f3 d5 10.Bxd5 Nxd5 11.Nxd5 f5 12.Nxc6 bxc6 13.Nb6 Rb8 14.Qxd8 Rxd8 15.Rd1 Rxd1+ 16.Kxd1 fxe4 17.Nxc8 Rxc8 18.b3 exf3 19.gxf3 a4 20.Re1 Ra8 21.Re2 Kf7 22.Bc5 e6 23.Rd2 Ke8 24.Ke2 Be5 25.Ke3 g5 26.Ke4 Bf4 27.Rg2 Kf7 28.h4 h6 29.Bb4 Rb8 30.Bc3 Ra8 31.Bd4 Ra5 32.hxg5 hxg5 33.Bc3 Ra8 34.Be5 axb3 35.cxb3 Bxe5 36.Kxe5 Ke7 37.a4 Rb8 38.Rxg5 Rxb3 39.Rg7+ Kd8 40.f4 Rb4 41.a5 Ra4 42.Kxe6 Re4+ 43.Kd6 Rd4+ 44.Kxc6 Rxf4 45.a6 Rc4+ 46.Kb5 Rc7 47.Rg8+ Kd7 48.a7 1-0

HITECH - Christiansen,Larry

Aegon, 1995

1.e4 g6 2.d4 d6 3.Nc3 a6 4.h4 h5 5.Nf3 Bg7 6.Bg5 Bg4 7.Qd3 Bxf3 8.gxf3 Nc6 9.Ne2 Nf6 10.Qb3 Rb8 11.0-0-0 Nh7 12.Be3 0-0 13.d5 Ne5 14.f4 Ng4 15.f5 c5 16.Nf4 b5 17.fxg6 fxg6 18.Nxg6 c4 19.Qa3 Rf6 20.Nf4 Rxf4 21.Bxf4 Qf8 22.Qg3 Qf6 23.e5 dxe5 24.Be3 c3 25.bxc3 Qd6 26.Bh3 Nhf6 27.Kb2 Ne4 28.Qg2 Nxc3 29.Kxc3 Rc8+ 30.Kd3 Qa3+ 31.Ke2 Qxa2 32.Bxg4 Qc4+ 33.Ke1 hxg4 34.Rg1 Kf7 35.Rd2 a5 36.Qxg4 Qxg4 37.Rxg4 b4 38.Ke2 Bf6 39.h5 Rb8 40.Rd1 Rc8 41.Kd3 Rd8 42.Kc4 Rc8+ 43.Bc5 a4 44.Kxb4 a3 45.Ra1 Rh8 46.Rxa3 Rxh5 47.Ra7 1-0

Fritz 3 - Cifuentes,Roberto

Aegon, 1995

1.c4 e6 2.d4 d5 3.g3 Nf6 4.Bg2 c6 5.c5? Taken out of its opening book early, Fritz 3 replies with a mistake. This move releases tension in the center and makes it very easy for Black to develop his pieces. 5...b6 6.cxb6 [6.b4 a5] 6...axb6 7.Bf4 Bd6 8.Bxd6 Qxd6 Black already has a slight edge. 9.Nf3 0-0 10.0-0 Nbd7 11.e3 Ne4 12.Nbd2 f5 13.Qb3 c5 14.a3 Ba6 15.Rfe1 c4 16.Qc2 b5 17.Rac1 Bb7 18.Red1 Bc6 19.Nxe4 fxe4 20.Nd2 b4 Threatening to win at least a pawn. Also, ...Ba4 may be coming soon. 21.Nxc4? A bad move in a bad position. White will get virtually nothing for the piece. 21...dxc4 22.Qxc4 Bd5 23.Qxb4 Qxb4 24.axb4 Rfb8 25.Rc7 Nf6 26.Rdc1 Rxb4 27.Rc8+ Rxc8 28.Rxc8+ Kf7 29.Rc2 Ra4 30.Rc7+ Kf8 31.h3 Ra1+ 32.Kh2 Rb1 33.Rc8+ Ke7 34.Rb8 h5 35.Rb6 Nd7 36.Rb4 g5 37.g4 h4 38.Bh1 Kd6 39.Bg2 Kc6 40.Bh1 Nb6 41.Bg2 Kc7 42.b3 Kc6 43.Rc4+ Kd7 44.Rb4 Kc7 45.Bh1 Nc8 46.Kg2 Nd6 47.Kh2 Rxb3 48.Ra4 Rb2 49.Kg1 Rb1+ 50.Kh2 Rb2 51.Kg1 Ra2 52.Rxa2 Bxa2 53.Kf1 Kc6 54.Ke1 Kb5 55.Kd2 Kb4 56.Ke1 Kc3 57.Bg2 Bc4 58.Kd1 Bd3 59.Ke1 Kc2 60.Bf1 Bxf1 61.Kxf1 Kd2 0-1

Final Results - 10th Annual Aegon Tournament

May 1995 - The Netherlands

Humans vs. Computers

	Player Rating*	Tourn Perform. Rating**	Score	Tie Break Points
1. John van der Wiel	2570	2702	5.5	23.5
2. HIARCS	----	2631	5.0	23.0
3. Gert Ligterink	2440	2578	5.0	22.5
4. CHESS GENIUS X	----	2662	5.0	22.5
5. Yasser Seirawan	2600	2554	5.0	22.0
6. M-CHESS PRO	----	2652	5.0	20.0
7. HITECH	----	2600	5.0	19.0
8. Mephisto PC-Board A.	----	2473	5.0	16.5
9. W-CHESS	----	2424	5.0	16.0
10. SOCRATES	----	2487	5.0	15.5
11. Roberto Cifuentes	2535	2479	4.5	23.5
12. Hans Ree	2435	2493	4.5	22.0
13. Nico Kuijf	2286	2443	4.0	24.0
14. QUEST	----	2489	4.0	23.5
15. Dr. John Nunn	2630	2413	4.0	22.5
16. David Bronstein	2435	2362	4.0	21.0
17. FRITZ 3	----	2378	4.0	19.5
18. Sofia Polgar	2500	2436	4.0	19.0
19. REBEL	----	2403	4.0	19.0
20. ZARKOV	----	2336	4.0	18.5
21. VIRTUA CHESS	----	2305	4.0	18.0
22. CHESSICA	----	2367	4.0	17.5
23. Zugzwang	----	2257	4.0	17.5
24. NIGHTMARE N	----	2285	4.0	16.0
25. KALLISTO	----	2284	4.0	16.0
26. ARTHUR	----	2341	4.0	16.0
27. JUNIOR	----	2179	4.0	13.5
28. Herman Grooten	2355	2325	3.5	22.5
29. Erik Hoeksema	2415	2373	3.5	22.0
30. Larry Christiansen	2570	2281	3.5	21.5
31. Zsuzsa Polgar	2545	2315	3.5	21.0
32. Martin Voorn	2116	2293	3.5	20.5
33. Heleen de Greef	2165	2354	3.5	20.5
34. MEPHISTO GENIUS	----	2445	3.5	20.5
35. MEPHISTO MONTREUX	----	2235	3.5	19.0
36. Paul Boersma	2355	2322	3.5	18.5
37. R-30	----	2249	3.5	18.0
38. THE KING 2.5	----	2262	3.5	17.5

Player	Rating*	Tourn Perform. Rating**	Score	Tie Break Points
39. HECTOR 2	----	2402	3.5	17.0
40. SCHAAKMEESTER 2.0	—	2219	3.5	17.0
41. SCHACH 3.0	----	2228	3.5	16.0
42. GANDALF	----	2180	3.5	15.5
43. Jessica Harmsen	2170	2259	3.0	20.5
44. John Donaldson	2420	2132	3.0	19.5
45. CHESS MASTER 4000	----	2290	3.0	19.0
46. Lex Jongsma	1960	2249	3.0	19.0
47. ISICHESS	----	2375	3.0	18.5
48. Wim van der Wijk	2210	2312	3.0	18.5
49. NOW	----	2297	3.0	17.0
50. NIGHTMARE D	----	2102	3.0	17.0
51. MEPHISTO BERLIN	----	2247	3.0	16.5
52. CAPTURE	----	2225	3.0	16.5
53. PANDIX	----	2182	3.0	16.0
54. CAMEL	----	2255	3.0	15.5
55. Michael Hovink	2206	2122	2.5	22.0
56. Jannes van der Wal	2270	2256	2.5	21.5
57. P.v. Voorthuijsen	2300	2204	2.5	20.5
58. E.M.O. Karstan	2177	2145	2.5	19.0
59. Ad van den Berg	2233	2130	2.5	18.5
60. Tim Krabbe	2258	2057	2.5	18.5

Remaining Computer Entries:

63. SAITEK BRUTE FORCE	----	2023	2.5	14.5
64. L-CHESS	----	2109	2.5	13.0
65. DIOGENES	----	2038	2.5	12.5
76. NOVAG SAPPHIRE	----	2066	2.0	15.5
79. SAITEK PRESIDENT	--	2038	2.0	13.5
80. DAPPET	----	1928	2.0	13.5
81. CHESS SYSTEM TAL	----	1984	2.0	13.0
82. FRENCHCHESS	----	1979	2.0	12.5
83. CENTAUR	----	1870	2.0	12.0
88. SAITEK GK 2100	----	1939	1.5	16.5
89. CHECK CHECK	----	1958	1.5	16.0
92. MIRAGE	----	1870	1.5	13.5
95. BIONIC	----	1737	1.0	12.5
96. ANANSE	----	1373	0.0	14.0

*Rating refers to the human's pre-tournament rating. If FIDE rating, add 85 to be U.S.C.F. equivalent; if national rating, add 100 to 150 points.

**Tournament Performance Rating refers to the rating based upon this tournament only. Add 100 to 150 points to get U.S.C.F. equivalent.

The 8th World Computer Chess Championships

The Chinese University of Hong Kong, 25-30 May 1995.

by Dr.H.K.Tsang

Fritz is the new World Computer Chess Champion after winning the one game playoff , which was played under standard time controls of 40 moves in 2 hours followed by 40 moves per hour. The colors in the playoff were decided by the toss of a coin and Fritz had to start the game by defending with the black pieces. The playoff was a tense game in which Fritz managed to obtain an opening advantage on the black side of the Ruy Lopez opening. The game started about 9pm on Monday 29 May and lasted until about 3am on Monday 30 May, Hong Kong time.

By winning the championships Fritz demonstrated that chess knowledge was at least as important as computing power - Fritz was using one of the least powerful computers in the tournament (a standard Pentium 90MHz PC supplied by the Chinese University of Hong Kong) Fritz's opponent in the playoff was StarSocrates, a powerful chess computer system developed by MIT Laboratory for Computing Science. Starsocrates was using the Intel Paragon parallel supercomputer located at the Sandia National Laboratories, USA. The Paragon is 50 feet long and weighs 30,000 pounds, and has 1824 processors, each with 16 or 32 MByte of memory. The game was played at the Chinese University of Hong Kong, with the StarSocrates program relaying its moves to Hong Kong via the Internet.

In winning the Championships, Fritz had to defeat the tournament favourite, IBM Deep Blue Prototype in round 5 of the Championships. Fritz managed to win against Deep Blue Prototype by using its better opening library. The Deep Blue Prototype was out of its opening library in a highly complex position where concrete analysis and calculation was of less use than chess knowledge.

Final Standings 1 Fritz (4/5, 5/6): Fritz won the title on the playoff versus Star Socrates. 2 Star Socrates (4/5, 4/6) 3-5 Deep Blue Prototype, Frenchess, Junior (3.5/5) 6-10 Rebel, Chess Genius, WChess, Zugzwang, Hitech (3/5) 11-13 Cheiron, Schach3, Virtuachess (2.5/5) 14-20 Zeus3, Ulysses, Phoenix, Ferret, Dark Thought, SOS, Pandix (2/5) 21-22 Gandalf, Nightmare 23-24 Woodpusher, Lchess

The Saitek Challenge (Human-Computer Match on Sunday 28 May 1995) The human versus computers match was won by the computers by 4.5-1.5 (computers had 3 wins and 3 draws). Fritz was held to a draw by International Master Dr M.K.Wong. The Hong Kong national Champion, X.Yang (rated 2425) was held to a draw by Chess Genius and the Hong Kong Open Champion, H.Tsang (rated 2200) was defeated by the Mephisto Advantage which is a commerical version of the previous world champion, Rebel 6.0.

Input By Tsang Wing Ki of CUHK

Final Standings Hong Kong (HKG), 1995.

		1	2	3	4	5	
1	Fritz	-12	+15	+17	+14	+ 3	4.0
2	Star Socrates	- 3	+14	+23	+ 8	+ 7	4.0
3	Deep Blue	+ 2	+ 7	+11	= 9	- 1	3.5
4	Frenchess	= 9	- 6	+20	+11	+14	3.5
5	Junior	- 7	=18	+24	+16	+12	3.5
6	Chess Genius	=10	+ 4	= 8	=12	= 9	3.0
7	Hitech	+ 5	- 3	+15	+18	- 2	3.0
8	Rebel	+13	=12	= 6	- 2	+18	3.0
9	WChess	= 4	+10	=12	= 3	= 6	3.0
10	Zugzwang	= 6	- 9	=21	+15	+20	3.0
11	Cheiron	+21	+24	- 3	- 4	=13	2.5
12	Schach 3	+ 1	= 8	= 9	= 6	- 5	2.5
13	Virtua Chess	- 8	+20	-14	+23	=11	2.5
14	Dark Thought	+16	- 2	+13	- 1	- 4	2.0
15	Ferret	+19	- 1	- 7	-10	+22	2.0
16	Pandix	-14	+22	=18	- 5	=19	2.0
17	Phoenix	-18	+19	- 1	-20	+23	2.0
18	SOS	+17	= 5	=16	- 7	- 8	2.0
19	Ulysses	-15	-17	=22	+24	=16	2.0
20	Zeus 3.0	+22	-13	- 4	+17	-10	2.0
21	Gandalf	-11	=23	=10	-22	=24	1.5
22	Nightmare	-20	-16	=19	+21	-15	1.5
23	LChess	=24	=21	- 2	-13	-17	1.0
24	Woodpusher	=23	-11	- 5	-19	=21	1.0

Fourteen programs were running on fourteen 90 MHz Pentium PCs, three programs (Ulysses, SOS and Cheiron) were running on SUN Microsystems Sparc 20 workstations, one (Phoenix) was on a Sparc 2000 (20 cpu) system, one (Dark Thought) was on a DEC Alphaserver 2100 and five were using remote computer systems which included an IBM RS/6000 workstation with 14 slave processors (for the Deep Blue Prototype), a Cray T3D supercomputer (Frenchess), a 1824 node Intel Paragon supercomputer (Star Socrates), a Sun 4 workstation with dedicated chess hardware (Hitech), and a system with 96

processor GC-Powerplus distributed system (Zugzwang).

Participant List

1. **Cheiron** by Ulf Lorenz (Germany)
2. **Chess Genius** by Richard Lang (UK)
3. **Dark Thought** by Peter.W.Gillgasch, Markus Gille and Ernst Heinz. (Germany)
4. **Deep Blue** Prototype by Feng Hsing Hsu, Murray Campbell and A.Joseph Hoane. (USA)
5. **Ferret** by Bruce Moreland. (USA)
6. **Frenchess** by M.F.Baudot, J.C.Weill, J.L.Seret (IM) and Michel Gondran (EDF) . (France)
7. **Fritz** by Frans Morsch and Cok de Gorter (The Netherlands) and Mathias Feist (Germany)
8. **Gandalf** by Steen Suurballe (Denmark)
9. **Junior** by Shay Bushinsky and Amir Ban (Israel)
10. **Hitech** by Hans Berliner, Chris McConnell et al. (USA)
11. **Lchess** by Lex Loep and Ger Neef (Netherlands)
12. **Rebel** by Ed Schroeder (Netherlands)
13. **Nightmare** by Reinhold Gellner and Gaby von Rekowski (Germany)
14. **Pandix** by Gyula Horvath, Szuzsa Horvath and Csaba Szues (Hungary)
15. **Phoenix 1989** by Jonathan Schaeffer (Canada)
16. **Schach 3** by Matthias Engelbach (Germany) and Tom Kreitmeir (Netherlands)
17. **SOS** by Rudolf Huber (Germany)
18. **StarSocrates** by D.Dailey, C.Joerg, B.Kuszmaul, C.Leiserson, R. Blumofe, M.Frigo, L.Kaufman (IM), K.Randall, Rolf Riesen and Yuli Zhou (USA)
19. **UlyssesCCN** by Ulf Lorenz and Valentin Rottmann (Germany)
20. **VirtuaChess** by M.F.Baudot and Jean Christophe Weill (France)
21. **WChess** by Dave Kittinger (USA)
22. **Woodpusher** by John Hamlen (UK)
23. **Zeus 3.0** by Gerardo Castano (Spain)
24. **Zugzwang** by R.Feldman and P.Mysliwietz (Germany)

Program Descriptions

1. Cheiron by Ulf Lorenz (Germany)

In Greek mythology, Cheiron was the wisest of all centaurs and the teacher of many heroes. The program Cheiron is written in C. It is an alpha-beta program using most of the known state-of-the-art heuristics including killer heuristics, transposition table, aspiration search, plausible move ordering, iterative deepening, selective deepening etc. Null moves, however, are not used. The quiescence search is quite large and examines some tactical motifs, particularly mating and promotion threats. Apart from the move generator, the evaluation function is the most expensive part of the program. It examines the pawn structure, king's security, static positions of the pieces, everlasting knights etc. as well as special situations in the endgame (e.g. there are positions when two pawns are more worth than a rook). On a Pentium 90MHz the program will search about 10.000 nodes per second. Cheiron is more a positional playing than a tactical playing program. Cheiron uses an opening book containing about 12,000 positions to get a good start into the game. Using the Bednorz-Toennissen test, Cheiron has an estimated rating of 2100 ELO on a 50MHz PC. Tournament results against humans supports this number. Originally, the program was developed for Unix boxes, but a version has been developed with a graphical interface using Turbo C in a DOS-Windows 3.1 environment.

2. Chess Genius by Richard Lang (UK)

Chess Genius is an experimental development of the program that made history by defeating the World Champion Gary Kasparov in a rapid-play match at the Intel Grand Prix in London 1994. Its author, Richard Lang, has been author of programs which held the title of World Microcomputer Chess Champion in 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991 and 1993. Chess Genius is written in assembly language for the Intel Pentium microprocessor. Chess Genius is currently ranked top of the Swedish Computer Rating List.

3. Dark Thought by Peter.W.Gillgasch, Markus Gille and Ernst Heinz. (Germany)

Dark Thought is a brute-force program employing sophisticated move ordering techniques and search extensions backed by a selective quiescence search. On a DEC 3000-600 (175Mhz Alpha 21064 CPU, 64MB RAM) Dark Thought visits up to 60,000 nodes per second and reaches a non-selective, brute- force search depth of at least 8 plies in 1 minute. Its opening book contains 250,000 positions. On-line access to Thompson's endgame databases is handled by a greatly enhanced version of the public domain software by Beuckens and Hoekstra. Peter Gillgasch, the main brain behind the chess engine, wrote a prototype version of Dark Thought in Pascal in 1992. Today the program compiles and runs from the same ANSI C source files on a variety of platforms. Markus Gille and Ernst Heinz are responsible for fine-tuning the evaluation function and databases and Peter Gillagasch still maintains the chess engine. During the World Championships, Darkthought will run on the most powerful DEC Alpha workstation available.

4. Deep Blue Prototype by Feng Hsing Hsu, Murray Campbell and A.Joseph Hoane. (USA)

Deep Blue Prototype consists of an IBM RS/6000 workstation with 14 chess search engines as slave processors. Each processor contains a VLSI chip for move generation, as well as additional hardware for search and evaluation. Each Deep Thought 2 processor searches about 500,000 positions per second standalone,

or about 400,000 positions per second as a slave processor. (This is about 1/10th of the projected speed of the Deep Blue single-processor currently in fabrication.) The 14- processor Deep Thought 2 typically searches between 3 and 5 million positions per second. When conducting a search, the search tree near the root position is processed on the host workstation, and includes selective search extension algorithms such as singular extensions. The deepest nodes in the search tree are handled by the slave search engines which usually do 4-ply alpha-beta searches.

5. Ferret by Bruce Moreland. (USA)

Ferret is a "normal" brute-force program that runs under Windows NT. Techniques and tools used by the program include alpha-beta pruning, selective search extensions, quiescence search limited by a static exchange evaluator, null-move forward pruning, a 50,000-positions opening book, several hash tables and a few simple endgame databases. The program consists of about 20,000 lines of C code and has been compiled using Microsoft Visual C 2.0. Ferret searches approximately 18,000-32,000 nodes per second on a Pentium 66. It was written during off-hours over a period of about 4 years, for fun. Ferret finished fifth in Don Beal's uniform platform tournament last September. It has also played several hundred games of blitz chess on the Internet Chess Server, where it has been shown to be competitive among strong human players and various commercial programs. Ferret is copyrighted but its author is not particularly secretive about the program as he feels indebted to the many people who have answered his own questions.

6. Frenchess by M.F.Baudot, J.C.Weill, J.L.Seret (IM) and Michel Gondran (EDF) . (France)

Frenchess is a parallel chess program which runs on a CRAY T3D computer (128 Alpha processors, owned by the Commissariat a l'Energie Atomique located in Grenoble, France). It is written in C and is based on the parallel algorithm described by Jean Christophe Weill in his PhD thesis: Alpha-Beta Distribue Avec Droit d'Ainesse (ABDADA). The evaluation relies mostly on an Oracle approach, which introduces strategy and is designed to be rewritten in the CHEVAL (CHess EVAluation Language) evaluation function description language currently under development (but CHEVAL will probably not be ready for the World Championships). Frenchess is written with the support of the "Direction des Etudes et Recherches (DER) d'Electrique de France (EDF)" as a research project on parallel computing.

7. Fritz by Frans Morsch and Cok de Gorter (The Netherlands) and Mathias Feist (Germany)

Fritz is built around a selective search technique known as null-move search. As part of its search, Fritz allows one side to move twice (the other side does a null-move). If the position after the null-move does not return a high value in the evaluation function, then clearly the first of the two moves did not contain a threat. This applies to 95% of the moves in a search. Detecting such moves before they are searched to the full depth is an excellent method to speed-up the search. In its latest version, Fritz manages a 10-times speed-up over a version without the null-move search. Selective search unavoidably introduces oversights, but these are few. In tournaments against humans and other programs, Fritz has proven to be a tough opponent when defending difficult positions.

8. Gandalf by Steen Suurballe (Denmark)

Gandalf is a PC program developed over the last ten years. The program performs highly selective searches, combining a one-ply brute-force search with selective search and search extensions. The search does not use standard techniques like the null-move method, but instead uses a rule-based method involving a calculation for every node to decide which moves are good. Development of the program was an extremely difficult and time consuming task. Gandalf searches about 1500 nodes per second on a 486/66. Gandalf has considerable chess knowledge and plays aggressively, which is unusual for a highly selective search program. Gandalf uses an opening book containing about 500,000 positions.

9. Junior by Shay Bushinsky and Amir Ban (Israel)

Junior is a leading Israeli chess playing PC program. It was developed as a hobby by Amir Ban and Shay Bushinsky. Junior's breakthrough occurred during August 1994: The program scored a remarkable equal fourth place (with GM Alon Greenfeld) in the Kfar-Saba Open national chess tournament. The games were conducted under normal tournament time control. In the final round, Junior amazingly defeated GM Leonid Gopstein. During November 1994, Junior participated in the strongest international blitz tournament ever held in Israel. It beat GM Ilya Smirin and drew with GM Lev Psakhis and GM Alon Greenfeld. Amongst others, Junior reached a completely won position against GM Judit Polgar. Since then Junior has established itself as a well respected player in the Israeli chess scene and is the one and only

software selected to play in Israel's national chess league. Junior is one of the top chess playing programs on the Internet Chess Server.

10. Hitech by Hans Berliner, Chris McConnell et al. (USA)

Hitech is a chess machine with special purpose hardware that is capable of evaluating 120,000 positions per second. The hardware is controlled by a SUN 4 workstation running either a brute force or selective search engine. Originally built in 1985 at Carnegie Mellon University, Hitech has since won several computer-computer and human-computer tournaments. Its primary purpose is supporting research into new search techniques. Active research includes a new selective search algorithm and techniques for automatically constructing better evaluation functions.

11. Lchess by Lex Loep and Ger Neef (The Netherlands)

The first version of LCHESS was written in 1987. In 1988 it participated for the first time in the Dutch Computer Chess Championship, ending 13th in a field of 16; the best result was in 1990 when it ended on a shared 3rd place. Lex Loep has steadily worked on the chess engine and the version which is playing in the WCCC has been ported to Windows NT. Techniques used by the chess engine include alpha-beta search, iterative deepening, PVS, null moves for pruning and thread detection, history tables, killer heuristics, transposition tables and refutation tables. Tactically the program plays very well, and is particularly good in finding mate threads. Positionally there is still a lot of work to do. On the Reinfeld test set it scores more than 80% with 1 minute CPU time on a Pentium 90. Search speed is 30,000- 50,000 nodes/second. Ger Neef wrote the user interface.

12. REBEL by Ed Schroeder (Netherlands)

This year Ed Schroeder, the author of REBEL, is celebrating his first decade as a professional chess programmer. In his first world championship in 1985 in Cologne, REBEL caused a sensation by barely missing first place and the title. "Fortunately", said the author, "otherwise I might have thought that I had already made a good chessprogram and yet there is still much to improve". Now, ten years later, the program is improved and is defending the World Champion title it won in Madrid (1993). Despite the successes in these ten years (for instance, its second place with 5 out of 6 in the recent AEGON tournament) Ed Schroeder thinks many things can be improved. The name, REBEL, has also remained because "the program is still not always doing what I want". But it is a question whether this has to be regarded as a profit or not because the author most of the times loses to his own program .... Anyway: it is playing chess at a high level!

13. Nightmare by Reinhold Gellner and Gaby von Rekowski (Germany)

Completely written in C, work on Nightmare started in 1989 as a non-commercial project. It is a brute force program searching up to 7-ply in the middle-game with a selective search depth of up to 40 ply. Modified null-move searches, modified singular extensions, part-ply extensions and a new idea of hashing related meaningful subtrees are special features of Nightmare. The program also uses well known techniques like killer-moves, history heuristic, principal variation search and hash tables of 64,000 entries per side. The tournament opening book consists of about 40,000 moves. Endgame databases are NOT used. Last year, Nightmare was transferred to 32-bit under extended DOS and it can now search 12,000 moves per second. The program's rating is about 2000ELO (German) on a 486-50.

14. Pandix by Gyula Horvath, Szuzsa Horvath and Csaba Szues (Hungary)

Gyula Horvath started writing chess programs in 1985. His program won the Amateur World Chess Championship in 1987 and the Personal Computer Chess Champion title in 1988 and 1989. His wife, Szuzsa, joined the development in 1986. She is mainly active in testing the program and in designing and programming the graphics of the commercial versions of the program. Both of them pursue chess programming as a hobby - Gyula works as a marketing researcher and Zsuzsa works as a telemarketing assistant. They have participated in various computer chess events since 1986. In 1993 their team increased to three members when Csaba Szues began to implement a new 100,000 moves opening book. The program is written in C and uses a 400KB hash table. It measures the move interestingness and incrementally updates the attack map. The program uses principal variation search, advanced time control and special limited quiescence search.

15. Phoenix 1989 by Jonathan Schaeffer (Canada)

The Phoenix program was an active participant in the 1980's computer chess tournaments and tied for first place in the 1986 World Championships. The program competing this year is essentially the same as that which competed in the 1989 World Computer Chess Championships. Phoenix's participation in the 1995 championships will serve as a benchmark for measuring improvements in the field. Phoenix will be running on an HP 9000/720 with 64MB RAM, which will be comparable to that used

by most participants, and therefore the primary difference will be in the software. Expectations are that the software advances in the last 6 years will allow the other programs to move past Phoenix '89 in the final standings. Perhaps the best possible outcome would have Phoenix finishing in last place, providing some experimental evidence of the progress in the field!

16. Schach 3 by Matthias Engelbach (Germany) and Tom Kreitmeir (The Netherlands)

Schach 3 is the PC version of Schach 2.x one of the earliest German chess programs. It is a non-commercial project developed and maintained by two former students. Work on Schach started in 1978 and after some surprisingly good results in computer chess tournaments, the authors could not stop working on the program. Even the distance - one of the programmers (Kreitmeir) lives in the Netherlands and the other in Germany - is no real handicap. The program is a more or less simple Shannon-A program with all the known extensions (the authors believe in the brute-force method for computer chess). The program is written in 486- assembler and can search 9 or ten plies in the middle-game. Schach participated in the 1980, 1983 and 1986 World Championships, in the ACM events in the period 1981-1985 and in the German and Dutch Championships since 1992. Best results were a 6th place in Linz 1980 and New York 1983, a 3rd place in the 1994 Dutch Championship and a first place in the 1994 German Championship (Zugzwang was absent, but we all need some good luck!)

17. SOS by Rudolf Huber (Germany)

SOS is a conventional chess program. It uses depth first minimax tree search with quiescence search, alpha-beta enhancement, minimal window search and null-move pruning. To improve the search efficiency, the history heuristic and a transpositional table is used. The search is extended to deeper plies on those move sequences which have a high probability of being part of the principal variation. For SOS, those sequences are recaptures and check evasions. Leaf node evaluation considers only material, piece placement and pawn structure and only about 10% of the CPU time is spent on this (not including the quiescence search which is capture only, but extends on "losing" captures which are checks and on checking sequences). The evaluation parameters are dynamic and continuously updated during tree search. SOS's weakest part is probably endgame knowledge. SOS actively plays a wide range of openings, but most of those lines are not very deep. With autoplay games against itself, the opening book is tuned to favour those lines which harmonize with SOS's style of play.

18. StarSocrates by D.Dailey, C.Joerg, B.Kuszmaul, C.Leiserson, R. Blumofe, M.Frigo, L.Kaufman (IM), K.Randall, Rolf Riesen and Yuli Zhou (USA)

The Star Socrates 2.0 chess program developed at the MIT Laboratory for Computer Science, will be running on the 1824 node Intel Paragon parallel supercomputer located at Sandia National Laboratories. The lead programmers are Don Bailey and Christopher F.Joerg and the project team is lead by Prof. Leiserson. Heuristic Software provided the original Socrates program on which StarSocrates was originally based. The Paragon is about 50 feet long and weighs about 30,000 pounds. Each node consists of two 50MHz I860 processors with either 16 or 32MB of memory. The program currently runs on both the Connection Machine CM-5 and the Intel Paragon. More information about StarSocrates can be found on the web at http://theory.lcs.mit.edu/~cilk/star-soc.html.

19. UlyssesCCN by Ulf Lorenz and Valentin Rottmann (Germany)

Ulysses was the legendary conqueror of Troy and on his adventurous journey home to Athens he made many wanderings. The program 'UlyssesCCN' is written in C and uses a new searching technique called 'Controlled Conspiracy Number Search' (CCNS). The CCNS algorithm has been developed by Lorenz and Rottmann in their master thesis. CCNS takes up the Conspiracy Number scheme which was published by McAllester in 1988. This scheme makes it possible to achieve selectivity in the plain search algorithm without any domain dependent (i.e. chess specific) knowledge. The search tree has to be kept in memory (at least implicitly). Conspiracy Numbers were further investigated by Schaeffer in 1989. He has implemented a Conspiracy Number Search (CNS) in his program 'Conspire', which showed good tactical performance but unfortunately not good positional play. In developing the CCNS we explicitly used, for the first time, the observed locality of other CNS algorithms. In the evaluation of leaf- nodes a CCNS algorithm is able to use quiescence searches with initial windows. Positional play becomes possible. UlyssesCNN also uses a hash table which recognizes transpositions. Last, but not least, only a best move is computed and no resources are wasted for computing an upper bound for the value of this move. All chess specific knowledge used is encoded in the evaluation function. This consists of a static evaluator and a small quiescence search. Using a

Sparc10 60MHz, UlyssesCCN searches about 8000 nodes per second, about 350 of them are Conspiracy Number nodes. The opening book consists of 11,000 positions. After 300 seconds at each position, Ulysses solves 281 positions of WinAtChess test set, consisting of 300 positions. To our knowledge, UlyssesCCN is the first chess program based on Conspiracy Numbers which achieved an acceptable result in a computer chess tournament.

20. VirtuaChess by M.F.Baudot and Jean Christophe Weill (France)

VirtuaChess is the commercial version of the Ecume and Cumulus 2 chess programs (which finished second in the blitz tournament in Munich and which tied 2nd/3rd in the 7th World Championships in Madrid). It runs on a PC with MSDOS and can use all of the available memory for its hash tables. It has a splendid graphical interface written by the French firm Titus. Most of the chess engine is written in 32 bit assembler, and the program includes dynamic evaluation of king safety and pawn structure. It is based on PVS and uses null-move pruning. The program has perfect knowledge of KPK endgames. The evaluation function attempts to build plans whenever it recognizes important features in a position. VirtuaChess runs at 20,000 nodes per second on a Pentium 90.

21. WChess by Dave Kittinger (USA)

WChess received world-wide attention after it scored 5 out of 6 against some of the strongest American grandmasters in the Intel Harvard Cup Man v Machine tournament held in October 1994. The program consolidated its position as one of the top micro-computer chess programs by winning the 1994 Uniform Platform Computer Chess Tournament held in London. WChess uses an iterative, depth first alpha-beta search with forward pruning and a tactical swap-off evaluation to limit the growth of the search tree. The evaluator is somewhat primitive and is not currently as dynamic as the author would like. Positional information is communicated to the search mainly by piece value tables. The current version of the program only implements end game databases for KPK although the author is looking ir adding more databases.

22. Woodpusher by John Hamlen (UK)

Woodpusher is a small chess program of conventional design. It uses an iterative deepening alpha-beta search with PVS and aspiration window enhancements. The first version of Woodpusher was born in 1989 as part of a university project looking into null-move search techniques. True to it's origins, this new version of the program still uses the null-move throughout the search to recognize threats and to forward prune branches of the search tree. A database of attacks from and to all the squares on the board is maintained by using CHESS 4.5's bit-board implementation. These data structures are used for both generating moves and making positional evaluations. Woodpusher's position evaluation is maintained almost entirely incrementally while making and un-making moves during the search, with very little work done at the terminal nodes. The evaluation is therefore necessarily simple, but does include true measures of mobility rather than relying on piece-square evaluations.

23. Zeus 3.0 by Gerardo Castano (Spain)

Gerardo Castano works as a medical doctor and writes computer chess programs as a hobby. Zeus 1.0 was written in basic and finished fifth out of seven in the first Spanish Computer Chess Championships in 1993. The program was rewritten in C in 1994 and uses the standard techniques of alpha-beta search, selective extensions, minimal PVS, transposition tables, killer heuristic, history heuristic, null-move pruning and quiescence search. Capturing moves, checks, promotions, mate threats are all considered in the search. Zeus 2.0 used 256KB hash tables and searched 3000 nodes per second. It won the second Spanish Computer Chess Championships in 1994 with a perfect score of 7/7. Zeus 3.0 uses massive hash tables (32MB), and contains extensive chess knowledge (pawn structure, strong squares, bad bishop etc). The opening book contains about 300,000 positions and recognizes move and color transpositions. The endgame database is being developed and the evaluation function, although large, has thus far produced good results...

24. Zugzwang by R.Feldman and P.Mysliwietz (Germany)

Zugzwang made its first moves in 1989. It won the bronze medal in the 1990 Computer Olympiad, and won the Paderborn (human) Championships in 1991. In the last Computer World Championships in Madrid 1992, Zugzwang, running on a system consisting of 1023 T800 transputers, finished second and was undefeated without playing the eventual Champion, Chess Machine Schroeder. In 1993 Zugzwang had its first victory over a grandmaster. In 1994 Zugzwang was completely rewritten from OCCAM to C (about 20,000 lines of code) and is now portable to a large spectrum of machines including SPARC, SGI, DEC Alpha, I860, 486 and PowerPC. In this year's Championships, Zugzwang will run on a GC-Powerplus distributed system (based on the PowerPC) with at least 96 processors. The opening book contains

about 130,000 moves and 1MB transpositional tables are used per processor. Zugzwang uses brute-force alpha-beta search with history tables and killer heuristics. The program searches about 3000 nodes per second per processor on a PowerPC. The search is performed by distributed processors using a distributed algorithm based on the Young Brothers Wait Concept, which gives good results even if as many as 1000 processors are used. In this case the system calculates moves more than 400 times faster than a sequential system.

Playoff

Round 6 - Chinese University HKG
White: Star Socrates
Black: Fritz

1.e4 e5 2.Nf3 Nc6 3.Bb5 Nf6 4.0-0 Bc5 5.Nxe5 Nxe5 6.d4 a6 7.Ba4 Nxe4 8.Qe2 Be7 9.Qxe4 Ng6 10.f4 0-0 11.Bb3 Bf6 12.Nc3 c6 13.Qd3 d5 14.Be3 b6 15.f5 Ne7 16.Rf3 c5 17.dxc5 d4 18.Rd1 Bb7 19.Bxd4 Bxf3 20.gxf3 Bxd4+ 21.Qxd4 Qxd4+ 22.Rxd4 bxc5 23.Rf4 Rac8 24.Bc4 Rc6 25.Ne4 Rd8 26.Kf2 Nd5 27.Rg4 Kf8 28.Rh4 Nf6 29.Ke3 h6 30.b3 Rd1 31.a3 Ra1 32.a4 Rd1 33.Bd3 Ke7 34.Ke2 Rg1 35.Rh3 Nd5 36.Rg3 Rh1 37.Rxg7 Rxh2+ 38.Kf1 Kf8 39.Rg3 Rh5 40.Kf2 Nb4 41.f6 Nd5 42.Rg1 Nxf6 43.Rd1 Re5 44.Nd2 Nd5 45.Nc4 Rg5 46.Be4 Nc3 47.Bxc6 Nxd1+ 48.Ke1 Nc3 49.f4 Rh5 50.Kd2 Nd5 51.Bb7 Ke7 52.Kc1 Nxf4 53.Bxa6 Rh2 54.Ne3 Ne2+ 55.Kb2 Nd4 56.Bc4 Nc6 57.Bb5 Na5 58.Nc4 Nxc4+ 59.Bxc4 f5 60.a5 Kd6 61.Kc3 h5 62.a6 Kc7 63.Be6 Rf2 64.a7 Kb7 65.Kd3 h4 66.a8Q+ Kxa8 67.Ke3 Rxc2 68.Bxf5 Rc3+ 69.Kf2 Rxb3 70.Be4+ Ka7 71.Bd5 Rb2+ 72.Kg1 h3 73.Be6 h2+ 74.Kh1 Ka6 75.Bd5 0-1

Games From Main Event

[Site "Chinese University HKG"] [Date "1995.05.25"] [Round "1"] [White "Deep Blue"] [Black "Star Socrates"] [Result "1-0"]

1. d4 Nf6 2. Nf3 d5 3. e3 e6 4. Bd3 Nc6 5. Nbd2 Bd6 6. e4 e5 7. O-O O-O 8. exd5 Nxd4 9. c4 Bg4 10. Re1 Nd7 11. h3 Bh5 12. g4 Bg6 13. Bxg6 fxg6 14. Kg2 Kh8 15. Nxd4 exd4 16. Ne4 Ne5 17. Bg5 Qd7 18. f4 Nxc4 19. Qxd4 Nb6 20. Nxd6 Qxd6 21. Re5 Rae8 22. Rae1 Rxe5 23. Rxe5 Nc8 24. Re6 Qd7 25. Kh2 Kg8 26. Qe5 Qa4 27. Qxc7 Qxa2 28. Qe5 Qa4 29. d6 Qc2+ 30. Kg3 Qd1 31. Kh4 Qd2 32. f5 Qf2+ 33. Qg3 Qd4 34. Qe3 Qd5 35. Qd2 Qxd2 36. Bxd2 Nb6 37. fxg6 hxg6 38. Kg5 Rd8 39. Bc3 Rd7 40. Kxg6 Kf8 41. Bd4 Nd5 42. Kf5 b6 43. h4 Nb4 44. h5 Nc6 45. Be3 Nd8 46. h6 Rf7+ 47. Ke4 g5 48. Rg6 Rh7 49. Bxg5 Nb7 50. Kd5 Kf7 51. Rf6+ 1-0

[Site "Chinese University HKG"] [Date "1995.05.25"] [Round "1"] [White "Frenchess"] [Black "WChess"] [Result "1/2-1/2"]

1. e4 e5 2. Nf3 Nf6 3. d4 Nxe4 4. Bd3 d5 5. dxe5 Nc6 6. Qe2 Nc5 7. O-O Nxd3 8. cxd3 Bg4 9. Be3 Bxf3 10. Qxf3 Nxe5 11. Qe2 Nc6 12. Bxa7+ Qe7 13. Re1 Qxe2 14. Rxe2+ Kd7 15. Be3 d4 16. Bf4 Nb4 17. Nd2 Nxd3 18. Bg3 Bb4 19. Nf3 f5 20. a3 f4 21. Rd1 fxg3 22. axb4 Rhe8 23. Rxe8 Kxe8 24. fxg3 Nxb4 25. Nxd4 Rd8 26. Re1+ Kf7 27. Rf1+ Kg6 28. Nf3 Re8 29. Nh4+ Kh5 30. h3 g5 31. g4+ Kh6 32. Nf5+ Kg6 33. Rd1 h5 34. Rd7 hxg4 35. hxg4 Re1+ 36. Kh2 Rc1 1/2-1/2

[Site "Chinese University HKG"] [Date "1995.05.25"] [Round "1"] [White "Rebel"] [Black "Virtua Chess"] [Result "1-0"]

1. e4 e5 2. Nf3 Nc6 3. c3 Nf6 4. d4 Nxe4 5. d5 Ne7 6. Nxe5 Ng6 7. Qd4 Qf6 8. Qxe4 Qxe5 9. Qxe5+ Nxe5 10. Bf4 d6 11. Na3 a6 12. O-O-O Be7 13. Re1 Ng6 14. Bg5 f6 15. Bd2 O-O 16. h4 Re8 17. f4 Bf5 18. g3 Bf8 19. Bg2 Ne7 20. h5 b5 21. Nc2 Bd3 22. Rhg1 Nf5 23. Nb4 Rxe1+ 24. Rxe1 Bc4 25. b3 a5 26. Nc6 Bd3 27. Kb2 Nh6 28. Bh3 f5 29. Nd4 a4 30. Re3 Be4 31. Nxb5 c5 32. dxc6 Bxc6 33. Nc7 Ra7 34. Ne6 Be4 35. b4 a3+ 36. Kb3 Be7 37. Nd4 Bf6 38. Nb5 Ra6 39. Nxa3 d5 40. Bf1 Ra8 41. Re1 Ng4 42. Nb5 Ra6 43. Be2 Nh2 44. Nd4 Rb6 45. Be3 Rb7 46. a4 Ng4 47. Bg1 Re7 48. Rd1 Rd7 49. a5 Rc7 50. b5 Rc8 51. b6 Rb8 52. Nc6 Re8 53. b7 d4 54. b8=Q Rxb8+ 55. Nxb8 dxc3 56. Nd7 c2 57. Rc1 Kf7 58. Rxc2 Bd8 59. Rc8 Bd5+ 60. Ka4 Be7 61. Bc4 Bxc4 62. Rxc4 Ke6 63. a6 Kxd7 64. a7 Bd6 65. a8=Q 1-0

[Site "Chinese University HKG"] [Date "1995.05.25"] [Round "1"] [White "Schach 3"] [Black "Fritz"] [Result "1-0"]

1. e4 e5 2. Nf3 f5 3. Nxe5 Nc6 4. Qh5+ g6 5. Nxg6 Nf6 6. Qh4 hxg6 7. Qxh8 Qe7 8. d3 fxe4 9. dxe4 Qxe4+ 10. Be3 Nd5 11. Nd2 Qxc2 12. Bh6 Qf5 13. O-O-O d6 14. Re1+ Ne5 15. Bb5+ Bd7 16. Bd3 Qf6 17. Qxf6 Nxf6 18. Bxg6+ Kd8 19. Bg5 Nxg6 20. Bxf6+ Kc8 21. g3 Bc6 22. Rhf1 Kd7 23. f4 Ne7 24. Kb1 Nd5 25. Ne4 Be7 26. Bxe7 Kxe7 27. f5 Rh8 28. f6+ Kf7 29. Ng5+ Kg6 30. f7 Kxg5 31. f8=Q Rxf8 32. Rxf8 Kg4 33. Ref1 a6 34. R1f2 Kh3 35. Kc1 Kg4 36. Kd2 Bb5 37. Ke1 c6 38. R2f7 1-0

[Site "Chinese University HKG"] [Date "1995.05.25"] [Round "1"] [White "Zugzwang"] [Black "Chess Genius"] [Result "1/2-1/2"]

1. e4 d5 2. exd5 Qxd5 3. Nc3 Qa5 4. d4 Nf6 5. Nf3 Bf5 6. Ne5 c6 7. g4 Be6 8. Bg2 Nbd7 9. Nxd7 Bxd7 10. Bf3 e6 11. O-O Be7 12. Re1 O-O 13. Ne4 Nxe4 14. Bxe4 Bd6 15. Be3 f5 16. Bd3 Qb6 17. Rb1 Qc7 18. h3 Bh2+ 19. Kg2 c5 20. dxc5 Bc6+ 21. Kf1 Qe5 22. gxf5 Qd5 23. Qg4 exf5 24.

Qc4 Rf7 25. Qxd5 Bxd5 26. a3 Rc8 27. Bd4 g6 28. b4 Rd8 29. Be5 Bxe5 30. Rxe5 Kg7 31. Rbe1 Kf6 32. f4 Ba2 33. Kg2 Rc7 34. Kg3 b6 35. cxb6 axb6 36. a4 Bd5 37. R1e3 Rc3 38. h4 Be4 39. Kf2 Bxd3 40. cxd3 Rc6 41. b5 Rcd6 42. Re7 Ra8 43. d4 Rxa4 44. Kf3 Rb4 45. Kg3 Rxb5 46. Rxh7 Rxd4 47. h5 g5 48. Rh6+ Kf7 49. Rf3 Rdb4 50. fxg5 Rg4+ 51. Kh3 Rxg5 52. Rg3 Rxg3+ 53. Kxg3 Rb4 54. Rg6 b5 55. Rb6 Rg4+ 56. Kf3 b4 57. h6 Kg8 58. Rb7 Kh8 59. Kf2 Rh4 60. Kf3 Rxh6 61. Rxb4 Rg6 62. Kf2 Kg7 63. Rb5 Rf6 64. Kf1 Kg6 65. Rb7 Rd6 66. Kf2 Rd3 67. Rb8 Kg5 68. Kg1 Rd2 69. Rh8 Kg4 70. Kf1 f4 71. Rg8+ Kf3 72. Kg1 Rd1+ 73. Kh2 Kf2 74. Ra8 Rd2 75. Kh3 1/2-1/2

[Site "Chinese University HKG"] [Date "1995.05.26"] [Round "2"] [White "Chess Genius"] [Black "Frenchess"] [Result "1-0"]

1. c4 e5 2. Nc3 Nf6 3. Nf3 Nc6 4. g3 Bb4 5. Nd5 e4 6. Nh4 Bc5 7. Bg2 d6 8. O-O Be6 9. Nxf6+ Qxf6 10. Bxe4 Bxc4 11. Qa4 d5 12. d3 a6 13. Bf3 Bb5 14. Qf4 Ne7 15. Qxf6 gxf6 16. Bf4 Bb6 17. Be3 Ba7 18. Bxa7 Rxa7 19. Rac1 Bc6 20. Ng2 O-O 21. Nf4 Rd8 22. d4 a5 23. e3 Ng6 24. Nh5 Rd6 25. Rc3 Ra6 26. Rfc1 a4 27. Be2 Rb6 28. R1c2 f5 29. Bd3 Ne7 30. Rc5 Rd8 31. Ra5 Rc8 32. Nf4 Rd8 33. Bf1 f6 34. Ne6 Rc8 35. Nc5 Be8 36. Nxa4 Bxa4 37. Rxa4 Kf7 38. Bd3 Ke6 39. b4 Kd6 40. b5 c6 41. Ra5 h6 42. Kg2 Rg8 43. a4 Rb8 44. Kh3 Ke6 45. Kh4 h5 46. Be2 Rh8 47. Ra7 cxb5 48. axb5 Kd6 49. Bd3 Rg8 50. Rc5 Rf8 51. Bf1 Rb8 52. Bg2 Ng6+ 53. Kh3 Ne7 54. Bf3 Rh8 55. Be2 Kd7 56. Bd3 Kd6 57. Rc1 Rg8 58. Ra5 Rb8 59. Kg2 Rg8 60. Kf3 Ke6 61. h4 Kd6 62. Rc5 Ke6 63. Ra2 Kd7 64. Ke2 Ke6 65. Kd2 Rh8 66. Be2 Kd6 67. Bf3 Ke6 68. Ra7 Kd6 69. Kc3 Ke6 70. Kb3 f4 71. gxf4 Rd8 72. Ka4 Rb8 73. Bxh5 Nc8 74. Ra5 Rd6 75. Rc7 Rd8 76. Bf3 Nb6+ 77. Kb4 Rdc8 78. Rh7 Rc2 79. Bg4+ Kd6 80. Rf7 Rxf2 81. Ra3 1-0

[Site "Chinese University HKG"] [Date "1995.05.26"] [Round "2"] [White "Fritz"] [Black "Ferret"] [Result "1-0"]

1. e4 d5 2. exd5 Qxd5 3. Nc3 Qa5 4. d4 Nf6 5. Bc4 Nc6 6. Ne2 Bd7 7. O-O e5 8. Bd2 Bd6 9. Nd5 Qa4 10. b3 Qa3 11. Nxf6+ gxf6 12. c3 Bg4 13. b4 Ne7 14. Bc1 Bxe2 15. Qc2 Bxc4 16. Bxa3 Bxf1 17. Rxf1 O-O-O 18. Qb3 Rhf8 19. b5 Kb8 20. Bxd6 Rxd6 21. Rd1 Re6 22. dxe5 fxe5 23. Qc4 Rc8 24. Rd7 Rd6 25. Rxd6 cxd6 26. Qxf7 Rxc3 27. g4 Nc8 28. Qxh7 Rc4 29. Qf5 Rc5 30. g5 e4 31. Qf6 1-0

[Site "Chinese University HKG"] [Date "1995.05.26"] [Round "2"] [White "Hitech"] [Black "Deep Blue"] [Result "0-1"]

1. e4 c5 2. c3 Nf6 3. d3 Nc6 4. Nf3 d6 5. Nbd2 e5 6. Qa4 Be7 7. d4 cxd4 8. cxd4 Bd7 9. Bb5 a6 10. Bxc6 Bxc6 11. Qc2 O-O 12. d5 Bd7 13. O-O Rc8 14. Qb3 Bb5 15. Re1 Nd7 16. Re3 Nc5 17. Qa3 f5 18. exf5 Rxf5 19. h3 a5 20. Rc3 Bf6 21. g4 Rf4 22. Rc2 Ra4 23. Qe3 Nd3 24. Rxc8 Qxc8 25. b3 Rxg4+ 26. Kh1 Rf4 27. Kg2 Rxf3 28. Nxf3 Nf4+ 29. Qxf4 exf4 30. Bb2 Bxb2 31. Re1 Qf5 32. a4 Bd7 33. Ng1 f3+ 34. Kh2 Be5+ 35. Kh1 Qf4 36. Rxe5 dxe5 37. b4 Bxh3 38. Nxh3 Qg4 39. Nf4 exf4 40. bxa5 Qg2# 0-1

[Site "Chinese University HKG"] [Date "1995.05.26"] [Round "2"] [White "Schach 3"] [Black "Rebel"] [Result "1/2-1/2"]

1. e4 c5 2. Bb5 a6 3. Be2 Nc6 4. d3 e6 5. Nf3 d5 6. Bf4 Nge7 7. Bg3 Ng6 8. O-O f5 9. h3 Be7 10. Nbd2 O-O 11. exd5 exd5 12. c3 Re8 13. d4 f4 14. Bh2 cxd4 15. Nxd4 Nxd4 16. cxd4 Bf6 17. Nf3 Bf5 18. Bd3 Bxd3 19. Qxd3 Qb6 20. Qf5 Rad8 21. Bxf4 Re4 22. Be5 Ne7 23. Qh5 g6 24. Qh6 Nf5 25. Qd2 Nxd4 26. Bxd4 Bxd4 27. Rab1 Bg7 28. b4 Rc4 29. Rfc1 Qc7 30. Qe3 Qc6 1/2-1/2

[Site "Chinese University HKG"] [Date "1995.05.26"] [Round "2"] [White "Star Socrates"] [Black "Dark Thought"] [Result "1-0"]

1. e4 e5 2. Nf3 Nc6 3. Bb5 a6 4. Bxc6 dxc6 5. O-O f6 6. d4 Bg4 7. dxe5 Qxd1 8. Rxd1 fxe5 9. Rd3 Bd6 10. Nbd2 b5 11. b3 Ne7 12. Bb2 Ng6 13. g3 O-O 14. Kg2 Rfe8 15. h3 Bd7 16. Rd1 Rf8 17. Bxe5 Bxh3+ 18. Kxh3 Bxe5 19. Kg2 Bd6 20. Rc3 c5 21. Ne1 Ne5 22. f4 b4 23. Re3 Ng4 24. Rf3 Rad8 25. Nc4 Be7 26. Rfd3 Nf6 27. Kf3 Rxd3+ 28. Nxd3 Rd8 29. Na5 Bf8 30. e5 Ne8 31. Nc6 Ra8 32. Ke4 a5 33. Kd5 c4 34. Kxc4 Ra6 35. Kd5 Rb6 36. Nb2 Ra6 37. f5 Kh8 38. Nc4 a4 39. N4a5 axb3 40. cxb3 Ra8 41. Ke6 Bc5 42. Rd8 Rxd8 43. Nxd8 Bf2 44. Kf7 Nd6+ 45. exd6 cxd6 46. g4 d5 47. g5 Be3 48. g6 hxg6 49. fxg6 Bg5 50. Nac6 Bh4 51. Kf8 Bxd8 52. Nxd8 d4 53. Nf7# 1-0

[Site "Chinese University HKG"] [Date "1995.05.26"] [Round "2"] [White "Virtua Chess"] [Black "Zeus 3.0"] [Result "1-0"]

1. e4 c5 2. Nf3 d6 3. d4 cxd4 4. Nxd4 Nf6 5. Nc3 a6 6. Bg5 e6 7. f4 Qb6 8. Nb3 Nbd7 9. Qf3 Be7 10. O-O-O h6 11. Bh4 g5 12. fxg5 Ne5 13. Qg3 Nh5 14. Qe1 hxg5 15. Bf2 Qc7 16. Kb1 Bd7 17. Qd2 f6 18. h4 Ng7 19. Be2 gxh4 20. Bxh4 O-O-O 21. Qd4 Nh5 22. Bxh5 Rxh5 23. Bxf6 Be8 24. Bxe7 Qxe7 25. Rxh5 Bxh5 26. Rh1 Bg6 27. Nd2 Qc7 28. Nf3 Qc4 29. Qf2 Nd7 30. Rd1 Qc7 31. Ng5 Nf8 32. Qf6 Qd7 33. Rh1 Re8 34. Rh6 Kb8 35. Rxg6 Nxg6 36. Qxg6 Rf8 37. b4 Qc6 38. Kb2 Rc8 39. Qf6 e5 40. Qf3 Qc4 41. a3 Qd4 42. Nh7 Rc7 43. Nf6 Rf7 44. Qh5 Rc7 45. Nd5 Rc8 46. Qf7 Qc4 47. g4 Qc6 48. g5 Ka7 49. g6 Qe8 50. Ne7 Rb8 51. Qf2+ b6 52. Ncd5 Qf8 53. Nc6+ Ka8 54. Nxb6+ Kb7 55. Na5+ Kc7 56. Nd5+ Kd7 57. Qa7+ Ke6 58. Qh7 Qg8 59. Qe7# 1-0

[Site "Chinese University HKG"] [Date "1995.05.26"] [Round "2"] [White "WChess"] [Black "Zugzwang"] [Result "1-0"]

1. e4 e6 2. d4 d5 3. Nd2 c5 4. exd5 exd5 5. Ngf3 Nc6 6. Bb5 Bd6 7. dxc5 Bxc5 8. O-O Ne7 9. Nb3 Bd6 10. Re1 O-O 11. Bg5 Bg4 12. Bh4 Re8 13. Bg3 Bxg3 14. hxg3 Qb6 15. a4 h6 16. Qd2 Bxf3 17. gxf3 Rad8 18. Rad1 Rd6 19. c4 Qd8 20. Nd4 a6 21. Bxc6 bxc6 22. c5 Rf6 23. Re5 Ng6 24. Rxe8+ Qxe8 25. Re1 Qb8 26. Re2 Ne5 27. Qe3 Nc4 28. Qe8+ Qxe8 29. Rxe8+ Kh7 30. b4 Nd2 31. Kg2 Nc4 32. Ra8 a5 1-0

[Site "Chinese University HKG"] [Date "1995.05.27"] [Round "3"] [White "Dark Thought"] [Black "Virtua Chess"] [Result "1-0"]

1. d4 Nf6 2. c4 e6 3. Nc3 Bb4 4. e3 O-O 5. Bd3 Nc6 6. Ne2 d5 7. cxd5 exd5 8. a3 Bd6 9. Nb5 Be7 10. O-O Re8 11. f3 a6 12. Nbc3 Bd6 13. Bc2 Qe7 14. e4 dxe4 15. fxe4 Bg4 16. Be3 Rad8 17. Qe1 Bxe2 18. Qxe2 Nxd4 19. Bxd4 Bxh2+ 20. Kxh2 Rxd4 21. Kh1 Qd6 22. Rad1 c5 23. Qf3 Re5 24. Kg1 Qe6 25. Qg3 Qd6 26. Rf5 Rxd1+ 27. Nxd1 Qd4+ 28. Ne3 Re8 29. Rf2 Qe5 30. Qxe5 Rxe5 31. Nc4 Re6 32. e5 Nd7 33. Rd2 Nf8 34. Bf5 Re7 35. Rd8 h5 36. Bc8 g6 37. Nd6 Rxe5 38. Bxb7 Re2 39. Nc4 Kg7 40. Bxa6 Ne6 41. Rd2 Re4 42. Nd6 Re1+ 43. Kf2 Rc1 44. Bc4 Ng5 45. Bd5 Kf8 46. Kg3 f6 47. a4 Ke7 48. Nb7 Nf7 49. a5 Ne5 50. a6 c4 51. a7 Ra1 52. Nd6 Kxd6 53. a8=Q Rxa8 54. Bxa8+ Kc5 55. Rd5+ Kb4 56. Rd6 f5 57. Re6 Nd3 58. Rxg6 f4+ 59. Kh4 Nxb2 60. Rf6 Kc3 61. Rxf4 1-0

[Site "Chinese University HKG"] [Date "1995.05.27"] [Round "3"] [White "Deep Blue"] [Black "Cheiron"] [Result "1-0"]

1. Nf3 Nf6 2. b3 Nc6 3. Bb2 d6 4. e3 e5 5. Bb5 Be7 6. d4 e4 7. Nfd2 Bg4 8. f3 exf3 9. gxf3 Bh3 10. Nc3 O-O 11. Bxc6 bxc6 12. Qe2 Rb8 13. Rg1 Qc8 14. d5 Qb7 15. Qf2 Nh5 16. Ne2 Bd7 17. Nf4 Bf6 18. Bxf6 Nxf6 19. Qh4 Kh8 20. Rxg7 Qb6 1-0

[Site "Chinese University HKG"] [Date "1995.05.27"] [Round "3"] [White "Phoenix"] [Black "Fritz"] [Result "0-1"]

1. c4 e5 2. Nc3 d6 3. Nf3 g6 4. g3 f5 5. d3 Bg7 6. Bg2 Nc6 7. Bg5 Nf6 8. d4 e4 9. Nd2 Ne7 10. O-O h6 11. Bf4 g5 12. Be3 Ng4 13. Qb3 O-O 14. c5+ d5 15. h3 Nxe3 16. fxe3 c6 17. Kh2 Kh8 18. Rad1 Qc7 19. Na4 b5 20. cxb6 axb6 21. Qxb6 Qxb6 22. Nxb6 Rxa2 23. b3 Ba6 24. Rfe1 Bb5 25. Nb1 Bxe2 26. Rd2 Rxd2 27. Nxd2 Bh5 28. Nd7 Ra8 29. Nf1 Ra3 30. Nc5 f4 31. exf4 gxf4 32. gxf4 Bxd4 33. Nxe4 dxe4 34. Rxe4 Bf6 35. Rb4 Bf7 0-1

[Site "Chinese University HKG"] [Date "1995.05.27"] [Round "3"] [White "Rebel"] [Black "Chess Genius"] [Result "1/2-1/2"]

1. Nf3 d5 2. c4 c6 3. cxd5 cxd5 4. d4 Nf6 5. Nc3 Nc6 6. Bf4 a6 7. e3 Bg4 8. Bd3 e6 9. O-O Be7 10. h3 Bh5 11. Rc1 O-O 12. a3 Rc8 13. Qe2 Bg6 14. Na4 Bxd3 15. Qxd3 Ne4 16. Rc2 Qa5 17. Nc3 Nd6 18. Rfc1 Nc4 19. Ng5 Bxg5 20. Bxg5 f6 21. Bf4 Ne7 22. e4 dxe4 23. Nxe4 Qf5 24. Rxc4 Rxc4 25. Rxc4 Qxf4 26. g3 Qb8 27. Rc2 Qd8 28. Qb3 Qd5 29. Qxd5 exd5 30. Nd6 Nc6 31. Rc5 Re8 32. f4 Kf8 33. Kf2 Nxd4 34. Rxd5 Nb3 35. Rd3 Nc5 36. Rd2 Rd8 37. Ke3 Nb3 38. Rd3 1/2-1/2

[Event "?"] [Site "Chinese University HKG"] [Date "1995.05.27"] [Round "3"] [White "WChess"] [Black "Schach 3"] [Result "1/2-1/2"]

1. e4 c5 2. c3 Nf6 3. e5 Nd5 4. Nf3 d6 5. d4 e6 6. Bd3 cxd4 7. cxd4 dxe5 8. dxe5 Bb4+ 9. Bd2 Nf4 10. Bb5+ Bd7 11. Bxd7+ Qxd7 12. O-O Bxd2 13. Nbxd2 O-O 14. Nc4 b5 15. Na3 a6 16. Qc2 Qd3 17. Rad1 Qxc2 18. Nxc2 Nc6 19. Ncd4 Rac8 20. Nxc6 Rxc6 21. g3 Ne2+ 22. Kg2 Rc2 23. Rd2 Rxd2 24. Nxd2 Rc8 25. Nb3 Rd8 26. Kf3 Nd4+ 27. Nxd4 Rxd4 28. Rc1 Kf8 29. Ke3 Ra4 30. a3 b4 31. axb4 Rxb4 32. Rc8+ Ke7 33. Rc7+ Ke8 34. Rc2 Kd7 35. Rd2+ Kc6 36. f4 a5 37. Rd6+ Kc7 38. Rd2 Rb5 1/2-1/2

[Site "Chinese University HKG"] [Date "1995.05.28"] [Round "4"] [White "Chess Genius"] [Black "Schach 3"]

1. c4 Nf6 2. Nf3 d6 3. Nc3 e5 4. d4 e4 5. Ng5 Bf5 6. g4 Nxg4 7. Ngxe4 Bxe4 8. Nxe4 d5 9. cxd5 Bb4+ 10. Bd2 Bxd2+ 11. Qxd2 O-O 12. Bg2 Nd7 13. Rc1 Rc8 14. Bf3 Ngf6 15. Rg1 Nxe4 16. Bxe4 Nf6 17. Bf3 Qd6 18. Rg3 Rfe8 19. Rc5 Nd7 20. Rc2 Re7 21. Qa5 Ree8 22. Kf1 a6 23. Qc3 Nf6 24. Qb3 Rb8 25. e3 Kh8 26. Kg1 Re7 27. Rc5 Kg8 28. Rc3 h6 29. a3 Kf8 30. Rc5 Kg8 31. Rc1 Kh8 32. Rc3 Kg8 33. Rc2 Kf8 34. Rc1 Kg8 35. Kh1 Kh8 36. Rcg1 g6 37. Rc1 Kg7 38. Kg1 Kh7 39. Rc5 Nd7 40. Rc2 f5 41. Rg2 Nb6 42. Rc1 Rd8 43. a4 Rb8 44. h4 a5 45. Rc5 Ra8 46. Qc2 Rf7 47. b3 Ra6 48. Qc3 Qd8 49. Rh2 Nc8 50. Rxa5 Rxa5 51. Qxa5 Nd6 52. Qc5 Qe7 53. h5 g5 54. Qc2 Nc8 55. Rh1 Kg7 56. Kf1 Qb4 57. Ke2 Qd6 58. Bg2 Qf6 59. Qd3 Qe7 60. Kd2 Qa3 61. Qc2 Nb6 62. Ke2 Kg8 63. Bf3 Kh8 64. Re1 Kg8 65. Kf1 Qb4 66. Ra1 Qd6 67. Qc5 Qd8 68. a5 Nc8 69. a6 bxa6 70. Rxa6 Nd6 71. Qc2 Kg7 72. Rc6 Re7 73. Be2 Kf7 74. b4 Kg8 75. b5 Rf7 76. Bd3 Kg7 77. Qb1 Qb8 78. Ke2 Kh7 79. b6 cxb6 80. Rxb6 Qf8 81. Rb8 Qe7 82. Ra8 Rf8 83. Ra6 Kg8 84. Kf1 g4 85. Qb6 Rd8 86. Ra7 Qf6 87. Bxf5 g3 88. f4 Qh4 89. Be6+ Kh8 90. Qc7 Qh1+ 91. Ke2 Qg2+ 92. Kd1 Qf1+ 93. Kd2 Qg2+ 94. Kc1 Qf1+ 95. Kb2 Qe2+ 96. Kb1 Qd1+ 97. Ka2 Qe2+ 98. Ka1 Qf1+ 99. Ka2 Qe2+ 100. Kb3 Qd3+ 1/2-1/2

[Site "Chinese University HKG"] [Date "1995.05.28"] [Round "4"] [White "Fritz"] [Black "Dark Thought"] [Result "1-0"]

1. e4 d6 2. d4 Nf6 3. Nc3 g6 4. f4 Bg7 5. Nf3 c5 6. dxc5 Qa5 7. Bd3 Qxc5 8. Qe2 O-O 9. Be3 Qa5 10. h3 Qb4 11. O-O Qxb2 12. Nb5 Ne8 13. e5 dxe5 14. fxe5 Qb4 15. Nxa7 Nc6 16. Rab1 Qa3 17. Nxc8 Rxc8 18. Rxb7 Nc7 19. Bc4 Nxe5 20. Nxe5 Bxe5 21. Bb3 Bf6 22. Rd1 Qa6 23. Qf3 Nb5 24. Rdd7 Qa5 25. Rxe7 Bxe7 26. Rxe7 Qc3 27. Bxf7+ Kh8 28. Qf4 g5 29. Qxg5 Rxf7 30. Rxf7 Nd6 31. Re7 Ne8 32. Qh4 Nf6 33. Bd4 Qxd4+ 34. Qxd4 Rc6 35. Qe5 Rb6 36. Qg5 Rb1+ 37. Kh2 Ng4+ 38. hxg4 Rh1+ 39. Kxh1 h5 40. Qg7# 1-0

[Site "Chinese University HKG"] [Date "1995.05.28"] [Round "4"] [White "Star Socrates"] [Black "Rebel"] [Result "1-0"]

1. e4 c5 2. c3 d5 3. exd5 Qxd5 4. d4 cxd4 5. cxd4 Nc6 6. Nf3 e5 7. Nc3 Bb4 8. Bd2 Bxc3 9. Bxc3 e4 10. Ne5 Nxe5 11. dxe5 Ne7 12. Qa4+ Bd7 13. Qb4 a5 14. Qd6 Bc6 15. Rd1 Qxa2 16. Qc5 Qe6 17. Bc4 Qg4 18. O-O b6 19. Qe3 b5 20. Be2 Qc8 21. Qg5 b4 22. Bd4 Ng6 23. e6 f6 24. Qc5 Ne7 25. Bc4 Qb7 26. Qh5+ g6 27. Qh4 Nf5 28. Qxf6 Rf8 29. Qg5 Nxd4 30. Rxd4 Rf5 31. Qe3 a4 32. Rfd1 Rb8 33. Rd6 Qb6 34. Qg3 e3 35. fxe3 Qc5 36. e7 Qxc4 1-0

[Site "Chinese University HKG"] [Date "1995.05.28"] [Round "4"] [White "Virtua Chess"] [Black "LChess"] [Result "1-0"]

1. e4 Nf6 2. e5 Nd5 3. d4 d6 4. c4 Nb6 5. exd6 exd6 6. h3 Be7 7. Nc3 O-O 8. Nf3 Bf6 9. Bd3 Nc6 10. O-O Re8 11. d5 Nb4 12. Bb1 Bd7 13. a3 Bxc3 14. bxc3 Ba4 15. Qd2 Na6 16. Ng5 h6 17. Qd3 Qf6 18. Qh7+ Kf8 19. Ne4 Qg6 20. Qxg6 fxg6 21. Bd3 Nxc4 22. Bxc4 Rxe4 23. Bd3 Rh4 24. Bxg6 Bb3 25. f4 Bxd5 26. Bd2 Bc4 27. g3 Rxh3 28. Kg2 Bxf1+ 29. Rxf1 Rxg3+ 30. Kxg3 Nc5 31. Kg4 c6 32. Be3 Na4 33. Rc1 b6 34. c4 Nc5 35. Bf2 Nb3 36. Rd1 Na5 37. Rxd6 c5 38. Bd3 Re8 39. Bh4 Nb3 40. Rd7 Nd4 41. Bg6 Ra8 42. Be7+ Kg8 43. Bd6 Nc6 44. Rc7 h5+ 45. Kxh5 Na5 46. Be5 Nc6 47. Rxg7+ Kf8 48. Bf6 Ne5 49. fxe5 Re8 50. Bxe8 Kxe8 51. e6 Kf8 52. Rh7 a5 53. Bh8 1-0

[Site "Chinese University HKG"] [Date "1995.05.28"] [Round "4"] [White "WChess"] [Black "Deep Blue"] [Result "1/2-1/2"]

1. e4 c5 2. c3 d5 3. exd5 Qxd5 4. d4 Nf6 5. Nf3 e6 6. Be2 Nc6 7. O-O cxd4 8. cxd4 Be7 9. Nc3 Qd6 10. Nb5 Qd8 11. Bf4 Nd5 12. Bg3 a6 13. Nc3 O-O 14. Qb3 Nf6 15. Rfd1 b5 16. a3 Bb7 17. Qa2 Na5 18. b4 Rc8 19. Rac1 Nc6 20. Bf4 Re8 21. d5 exd5 22. Nxd5 Nxd5 23. Qxd5 Qxd5 24. Rxd5 Bxb4 25. axb4 Rxe2 26. Be3 Re8 27. Rd7 Ba8 28. Nd2 Nxb4 29. Kf1 R2xe3 30. fxe3 Nd5 31. Kf2 h6 32. Nf1 Nb4 33. Nd2 Bd5 34. Rb1 Be6 35. Ra7 Nd3+ 36. Ke2 Nc5 37. Rb4 Bd5 38. g3 Ra8 39. Rxa8+ Bxa8 40. Rd4 Kh7 41. Rd8 Bb7 42. Rb8 Bh1 43. Rc8 Ne6 44. e4 Bg2 45. Ke3 Bh3 46. Rc6 f5 47. Rxa6 Nc5 48. Rd6 Nxe4 49. Nxe4 fxe4 50. Kf2 Bg4 51. Rb6 Bf3 52. Rxb5 g5 53. Ke3 Kg7 54. Rb7+ Kg6 55. Rb6+ Kg7 56. Re6 h5 57. Rd6 h4 58. g4 Bxg4 59. Kxe4 Bh3 60. Rd3 Bg4 1/2-1/2

[Site "Chinese University HKG"] [Date "1995.05.29"] [Round "5"] [White "Dark Thought"] [Black "Frenchess"] [Result "0-1"]

1.d4 d5 2.c4 c6 3.Nf3 Nf6 4.Nc3 dxc4 5.a4 Bf5 6.e3 e6 7.Bxc4 Bb4 8.0-0 Nbd7 9.Nh4 Bg6 10.Qb3 a5 11.g3 Qb6 12.Nxg6 hxg6 13.Rd1 0-0-0 14.Bf1 Rh5 15.Bg2 g5 16.f3 Rdh8 17.h3 Rxh3 18.Bxh3 Rxh3 19.Ne2 g4 20.fxg4 Nxg4 21.e4 Rh2 22.Bf4 Rf2 23.Nc1 g5 24.Bxg5 Nde5 25.Rd3 Nxd3 26.Qxd3 Be7 27.Qd1 Bxg5 28.Qxg4 Qxd4 0-1

[Site "Chinese University HKG"] [Date "1995.05.29"] [Round "5"] [White "Deep Blue"] [Black "Fritz"] [Result "0-1"]

1.e4 c5 2.Nf3 Nc6 3.d4 cxd4 4.Nxd4 Nf6 5.Nc3 e5 6.Ndb5 d6 7.Bg5 a6 8.Na3 b5 9.Bxf6 gxf6 10.Nd5 f5 11.Bd3 Be6 12.Qh5 f4 13.0-0 Rg8 14.Kh1 Rg6 15.Qd1 Rc8 16.c4 Qh4 17.g3 Qh3 18.Qd2 f3 19.Rg1 Rh6 20.Qxh6 Qxh6 21.cxb5 Bxd5 22.exd5 Nb4 23.Bf5 Rc5 24.bxa6 Nxa6 25.Nc2 Qd2 26.Ne1 Rxd5 27.Nxf3 Qxf2 28.Be4 Ra5 29.Rg2 Qe3 30.Re1 Qh6 31.Bc6+ Kd8 32.a3 f5 33.Rc2 Rc5 34.Rxc5 Nxc5 35.Rf1 Be7 36.a4 f4 37.gxf4 Qxf4 38.Rg1 Nxa4 39.b4 Qxb4 0-1

[Site "Chinese University HKG"] [Date "1995.05.29"] [Round "5"] [White "Chess Genius"] [Black "WChess"] [Result "1/2-1/2"]

1.c4 c6 2.d4 d5 3.Nc3 Nf6 4.Nf3 dxc4 5.a4 Bf5 6.Ne5 e6 7.f3 Bb4 8.Bg5 h6 9.Bh4 c5 10.dxc5 Qa5 11.Qd4 Nc6 12.Nxc6 bxc6 13.e4 Bg6 14.Bf2 0-0 15.Be2 Rfd8 16.Qxc4 Nd7 17.0-0 Bxc5 18.Bxc5 Qxc5+ 19.Qxc5 Nxc5 20.b4 Nb3 21.Ra2 Nd4 22.Rb1 a5 23.Bc4 axb4 24.Rxb4 Ra5 25.Kf2 Kh7 26.Rab2 e5 27.Ke3 Rc5 28.Ne2 f5 29.exf5 Bxf5 30.Bb3 Nxb3 31.R4xb3 Kg6 32.Ra3 Ra5 33.Rb6 Rd6 34.Rb7 Bc2 35.Rb4 c5 36.Rb5 Rxa4 37.Rxa4 Bxa4 38.Rxc5 Kf6 39.Nc3 Bc6 40.h4 Ke6 41.Nb5 Bxb5 42.Rxb5 Ra6 43.Rb4 Ra2 44.g4 Ra7 45.Ke4 Ra6 46.h5 Rd6 47.Rb7 Rd4+ 48.Ke3 Rd7 1/2-1/2

[Site "Chinese University HKG"] [Date "1995.05.29"] [Round "5"] [White "Rebel"] [Black "SOS"] [Result "1-0"]

1.e4 c5 2.b3 b6 3.Bb2 Bb7 4.Nc3 e6 5.Nf3 a6 6.d4 cxd4 7.Nxd4 d6 8.Bd3 Nd7 9.0-0 Ngf6 10.b4 Be7 11.f4 0-0 12.Qe2 b5 13.Kh1 Qb6 14.Nb3 Rfc8 15.a3 Qc7 16.Na5

Rcb8 17.Nxb7 Rxb7 18.Rae1 Rf8 19.e5 dxe5 20.fxe5 Ne8 21.Rd1 g6 22.Na2 Nb6 23.Nc1 Na4 24.Bd4 Rb8 25.c4 bxc4 26.Bxc4 a5 27.Bb5 Nb6 28.bxa5 Nd5 29.Nb3 Bxa3 30.a6 Rc8 31.a7 Qe7 32.Bc6 Nec7 33.Qf3 h6 34.Qh3 h5 35.Qf3 Bb4 36.Rc1 Ba3 37.Rc4 Bb4 38.Nc5 Rcd8 39.Ra1 Nb6 40.Rxb4 Rxd4 41.Rxd4 Qxc5 42.Qe4 Nca8 43.Rd6 Qc3 44.Rad1 Nc7 45.Qd4 Nbd5 46.Qxc3 Nxc3 47.Rf1 N3b5 48.a8Q Nxa8 49.Bxb5 Nc7 50.Bc4 Ne8 51.Rd7 Ng7 52.Rf6 g5 53.g3 h4 54.g4 h3 55.Kg1 1-0

[Site "Chinese University HKG"] [Date "1995.05.29"] [Round "5"] [White "Cheiron"] [Black "Virtua Chess"] [Result "1/2-1/2"]

1.d4 d5 2.Nf3 c6 3.c4 Nf6 4.Nc3 dxc4 5.a4 Bg4 6.Ne5 Bh5 7.f3 Nfd7 8.Nxc4 e5 9.Ne4 Bb4+ 10.Bd2 Qh4+ 11.g3 Qe7 12.Qb3 Bxd2+ 13.Nexd2 b6 14.a5 b5 15.Nxe5 Nxe5 16.dxe5 Qxe5 17.Qa3 Na6 18.Rc1 c5 19.e4 Rb8 20.Be2 Qd6 21.Nb3 0-0 22.Nxc5 Rfc8 23.b4 Nxc5 24.bxc5 Qd4 25.c6 b4 26.Qd3 Qxd3 27.Bxd3 Bxf3 28.Rf1 Bg4 29.Bc4 Rc7 30.Bd5 Bh3 31.Rf3 Rb5 32.Rb3 Be6 33.Rd1 Kf8 34.Rd4 Rxa5 35.Rbxb4 Ke7 36.Rb7 Rxb7 37.cxb7 Rb5 38.Bc6 Rb2 39.Rd2 Rb3 40.Kf2 f6 41.Rd4 a5 42.h4 h5 43.Ke2 Bg4+ 44.Kd2 Be6 45.Kc2 Rb6 46.Kd3 Rb3+ 47.Kd2 Rb1 48.Ke3 Re1+ 49.Kf2 Rb1 50.Rd1 Rb6 51.Ke3 a4 52.Rd3 g6 53.Kf4 Rb1 54.Ke3 Rb6 55.Kd2 Rb2+ 56.Kc1 Rb6 57.Kd2 Rb2+ 58.Kc1 Rb6 59.Kd2 1/2-1/2

[Site "Chinese University HKG"] [Date "1995.05.29"] [Round "5"] [White "Hitech"] [Black "Star Socrates"] [Result "0-1"]

1.d4 d5 2.c4 c6 3.Nc3 Nf6 4.cxd5 cxd5 5.f3 Nc6 6.e4 e6 7.e5 Nd7 8.f4 Bb4 9.Nf3 Qa5 10.Bd2 Qb6 11.Na4 Bxd2+ 12.Qxd2 Qb4 13.Nc3 Nb6 14.Nb5 0-0 15.Rc1 Qxd2+ 16.Kxd2 f6 17.Nd6 fxe5 18.fxe5 Nb4 19.a3 Nc6 20.Bb5 Bd7 21.Ke3 Rab8 22.Rhf1 Nc8 23.Nxc8 Rfxc8 24.Bxc6 bxc6 25.b4 a5 26.bxa5 Rb5 27.Rc5 Rxc5 28.dxc5 Ra8 29.Rc1 Rxa5 30.Rc3 Kf7 31.Nd4 g5 32.Nc2 Kg6 33.h3 h5 34.Kd4 Ra4+ 35.Nb4 g4 36.Rg3 Kg5 37.Rb3 Be8 38.hxg4 Kxg4 39.g3 Ra7 40.Re3 Ra4 41.Rd3 Ra8 42.Rc3 Bd7 43.Re3 Kh3 44.Rf3 Kg2 45.Rf7 Be8 46.Re7 Kxg3 47.Rg7+ Kf4 48.Rg8 Kf5 49.Rf8+ Kg5 50.Rg8+ Kh6 51.Rf8 Kg7 52.Rf3 h4 53.Rh3 Ra4 54.Rf3 Bg6 55.Rb3 Be4 56.Rc3 Bg2 57.Ke3 d4+ 58.Kxd4 h3 59.Rc1 h2 60.Kc4 Ra8 0-1

[Event "?"] [Site "Chinese University HKG"] [Date "1995.05.29"] [Round "5"] [White "Schach 3"] [Black "Junior"] [Result "0-1"]

1.e4 c5 2.c3 e6 3.d4 d5 4.exd5 exd5 5.Nf3 Nc6 6.Be2 cxd4 7.cxd4 Bd6 8.Nc3 Nge7 9.Bg5 f6 10.Bh4 0-0 11.Bg3 Bb4 12.0-0 Bxc3 13.bxc3 Na5 14.Qb1 Bf5 15.Qb4 Re8 16.Rfe1 Nec6 17.Qd6 Qxd6 18.Bxd6 Re6 19.Bf4 Rae8 20.Be3 Kh8 21.Nd2 b6 22.Bf3 Ne7 23.Bf4 Ng6 24.Rxe6 Bxe6 25.Bg3 Bf7 26.Bg4 Kg8 27.Bf5 Nf8 28.Bd3 Rc8 29.Rc1 Ne6 30.Nf3 Nc7 31.Nh4 g6 32.Nf3 Be6 33.Re1 Kf7 34.Nd2 Ne8 35.Re3 Ng7 36.Bf4 Nf5 37.Rh3 g5 38.Ba6 Re8 39.Be3 h6 40.Rf3 g4 41.Rf4 Ne7 42.Be2 h5 43.Bd3 f5 44.Nf1 Ng6 45.Rxf5+ Bxf5 46.Bxf5 Ne7 47.Bd7 Rd8 48.Bb5 Rc8 49.Bd2 Nc4 50.Be1 Kg6 51.Ng3 h4 52.Ne2 Rc7 53.h3 gxh3 54.Nf4+ Kf5 55.Nxh3 Ng6 56.Ba4 Kf6 57.Bc2 Re7 58.Kf1 Rf7 59.Bd3 Rf8 60.f3 Ne3+ 61.Kg1 Nf5 62.Bd2 Rc8 63.a4 Nge7 64.Kf2 Rc7 65.Ke2 Ng3+ 66.Kd1 Nef5 67.Nf4 Rd7 68.Kc2 Rd6 69.Kb3 Kg7 70.Kb4 Ne7 71.Kb5 Rd7 72.Ka6 Kf7 73.Be1 Ngf5 74.Nh3 Nd6 75.Ng5+ Kg8 76.Bb5 Nxb5 77.axb5 Nf5 78.Bf2 Re7 79.Nh3 Kf8 80.Nf4 Ke8 81.Nh3 Kd8 82.Nf4 Kc8 83.Nxd5 Re2 84.Kxa7 Rxf2 85.Nxb6+ Kd8 86.Nd5 Rxg2 87.Nf4 Nd6 88.Kb6 Rb2 89.Kc5 Nxb5 90.c4 Na3 91.Kd5 Rb4 92.Nh3 Nxc4 93.Kc5 Ra4 94.Kb5 Nb2 95.Kc5 Ra3 96.Ng1 Nd3+ 97.Kd5 Nf4+ 98.Ke4 Ra1 99.Kxf4 Rxg1 100.Ke5 h3 101.Ke4 Re1+ 102.Kd5 h2 103.Kc4 h1Q 104.Kd5 Qxf3+ 0-1

The Saitek Challenge

(Human-Computer Match on Sunday 28 May 1995)

Wong Meng Kong (IM, 2430) - Fritz (Pentium 90MHz)

1.c3 d5 2.Nf3 Nf6 3.d3 Nbd7 4.g3 e5 5.Bg2 Bd6 6.0-0 0-0 7.Qc2 b6 8.a4 Bb7 9.a5 bxa5 10.Nbd2 c5 11.e4 Rb8 12.Nh4 Bc7 13.Nf5 g6 14.Ne3 d4 15.Nec4 Bc6 16.b3 Re8 17.Ra2 dxc3 18.Qxc3 a4 19.bxa4 a6 20.Nb3 Qe7 21.Bh3 Red8 22.Be3 Bb7 23.Rc1 Kg7 24.Nca5 Bd6 25.Nxb7 Rxb7 26.Na5 Rb6 27.Nc4 Rb4 28.Qd2 Rdb8 29.Bh6+ Kg8 30.Bg5 Qf8 31.Kg2 Bc7 32.Bh6 Qe7 33.Bxd7 Nxd7 34.Ne3 Qd6 35.Nd5 Rd4 36.Be3 Rxd5 37.exd5 Qxd5+ 38.Kg1 Ba5 39.Qc2 Bc3 40.Rb1 Rxb1+ 41.Qxb1 Bd4 42.Bxd4 cxd4 43.a5 f5 44.Rc2 Kf7 45.Qb4 g5 46.h3 Ke6 47.Rc7 Kf6 48.Qa4 Ke7 49.Ra7 Kd8 50.Qb4 g4 51.hxg4 f4 52.Rxa6 fxg3 53.Qc4 Qf3 54.Qg8+ Kc7 55.Ra7+ Kd6 56.Rxd7+ Kxd7 57.Qxh7+ Kc6 58.Qf5 gxf2+ 59.Kf1 Qg3 60.Qxf2 Qxg4 61.Qf6+ Kd7 62.Kf2 Qh3 63.Qg7+ Kc6 64.Qf6+ Kd7 65.Qf7+ Kd6 66.Qf3 Qh2+ 67.Kf1 Kc5 68.a6 Qh7 69.Ke2 Qh2+ 70.Kd1 Qg1+ 71.Kc2 Qe1 72.Qf8+ Kb6 73.Qd6+ Ka7 74.Qc6 Qe2+ 75.Kc1 =-=

Yang, Xian (FM, 2425) - Chess Genius (Pentium 120MHz)

1.d4 Nf6 2.c4 g6 3.Nc3 d5 4.cxd5 Nxd5 5.e4 Nxc3 6.bxc3 Bg7 7.Bc4 c5 8.Ne2 0-0 9.Be3 Nc6 10.0-0 Bg4 11.f3 cxd4 12.cxd4 Na5 13.Bxf7+ Rxf7 14.fxg4 Rxf1+ 15.Kxf1 Qd6 16.Kg1 Qa3 5 Qxd1+ 22.Rxd1 bxc3 23.Nxc3 Rc8 24.Nd5 Kf7 25.Re1 Rc6 26.h4 Nc4 27.Nf4 e6 28.g5 Ra6 29.Re4 Nb6 30.Re2 Ra4 31.g3 Nd7 32.Kf1 Ra5 33.Rb2 Ra3 34.Ke2 Nxe5 35.Rb7+ Kg8 36.Nxe6 Rxa2+ 37.Ke3 Ra6 38.Nc5 Ra3+ 39.Kf4 Nd3+ 40.Nxd3 Rxd3 41.Rxa7 Rd1 42.Rb7 Ra1 43.Kg4 Ra4+ 44.Kh3 Ra1 45.Rd7 Ra4 46.Rc7 Rb4 47.Re7 Ra4 =-=

WChess - John Ady (FM, 2325)

1.e4 c5 2.c3 d5 3.exd5 Qxd5 4.d4 Nf6 5.Nf3 Nc6 6.Be2 e6 7.0-0 Be7 8.Be3 Ng4 9.Bf4 0-0 10.Re1 Rd8 11.h3 Nh6 12.Bxh6 gxh6 13.dxc5 Qf5 14.Qc1 e5 15.Bb5 e4 16.Bxc6 bxc6 17.Nd4 Qg6 18.Qf4 Bxc5 19.Re3 Kf8 20.Qxe4 Qxe4 21.Rxe4 Bxd4 22.Rxd4 Rxd4 23.cxd4 Rb8 24.b3 Rb4 25.Nd2 Rxd4 26.Nf3 Rd5 27.Rc1 Bd7 28.Kh2 Ke7 29.Kg3 Kd6 30.Rc4 c5 31.Rf4 Ke6 32.Rh4 h5 33.Re4 + Kd6 34.Kh4 f6 35.Rf4 Ke6 36.Kg3 Bb5 37.Re4 + Kf7 38.h4 h6 39.Kf4 Bf1 40.g3 Bd3 41.Ra4 a6 42.Ke3 Ke6 43.Nd2 Bb5 44.Re4 + Kf7 45.Nc4 f5 46.Rf4 Ke6 47.Ke2 a5 48.Ke1 a4 49.bxa4 Bxa4 50.Ne3 Rd4 51.Rxf5 c4 52.Rc5 Rd3 53.Ra5 Ra3 54.Nd5 c3 55.Nxc3 1-0

Dave Carless (FM, 2240) - Schach 3.0

1.Nf3 d5 2.g3 c5 3.Bg2 Nc6 4.d4 Bf5 5.0-0 e6 6.c4 Nf6 7.Nc3 Be7 8.cxd5 Nxd5 9.Re1 Nxc3 10.bxc3 Be4 11.Bf4 0-0 12.Ne5 Bxg2 13.Kxg2 Nxe5 14.Bxe5 Bd6 15.Bxd6 Qxd6 16.e3 Rfc8 17.Qf3 cxd4 18.cxd4 Rab8 19.Rec1 b5 20.Rab1 Rc7 21.Qf4 Qxf4 22.gxf4 Rxc1 23.Rxc1 g6 24.Kf3 Rb6 25.Ke4 Ra6 26.Ke5 Kg7 27.Rc2 f6 + 28.Ke4 Ra4 29.Kd3 Ra3 + 30.Kd2 Kf8 31.Kc1 h6 32.Kb2 Rd3 33.Rc8 + Ke7 34.Kc2 Ra3 =-=

Virtua Chess - Kaarlo Schepel (2240)

1.e4 e6 2.d4 d5 3.Nc3 Bb4 4.a3 Bxc3 + 5.bxc3 dxe4 6.Qg4 Nf6 7.Qxg7 Rg8 8.Qh6 c5 9.Ne2 Nc6 10.dxc5 Ne5 11.Bg5 Nfg4 12.Bxd8 Nxh6 13.Bc7 Nd7 14.Bd6 Rg5 15.Nd4 Nxc5 16.Nb5 Na6 17.Bf4 Rg6 18.Nd6 + Ke7 19.Nxe4 e5 20.Bxe5 Bf5 21.Bd3 Re6 22.f4 Bxe4 23.Bxe4 f6 24.Bxb7 Rg8 25.Bxa6 Rxa6 26.Bd4 Rxg2 27.0-0-0 Ke6 28.Kb2 Nf5 29.Rhe1 + Kf7 30.Bc5 Ra5 31.Bb4 Ra6 32.Rd7 + Kg6 33.Re8 Nh6 34.Rh8 Re6 35.Rdxh7 Ng4 36.Rh5 Ne3 37.Bc5 Nc4 + 38.Kb3 Nd2 + 39.Ka2 f5 40.R8h7 1-0

Tsang, Hon (2200) - Mephisto Advantage (Rebel 6.0)

1.Nf3 d5 2.g3 c6 3.d4 Bf5 4.Bg2 Nf6 5.c4 e6 6.0-0 Nbd7 7.b3 Be7 8.Nc3 0-0 9.h3 Re8 10.Bb2 Ne4 11.Nd2 Nxd2 12.Qxd2 dxc4 13.e4 Bg6 14.f4 cxb3 15.axb3 e5 16.dxe5 Qb6 + 17.Kh1 Nc5 18.Qc2 Qxb3 19.Qxb3 Nxb3 20.Rad1 h6 21.f5 Bh7 22.Ne2 Rad8 23.Nf4 Nd2 24.Rfe1 Bb4 25.Re2 Nc4 26.Rd3 Rxd3 27.Nxd3 Bd2 28.Bf1 Rd8 29.Rh2 Ba5 30.Bc1 Nxe5 31.Nxe5 Rd1 32.Rc2 Rxf1 + 33.Kg2 Rd1 34.Bf4 Bc7 35.g4 Bd6 36.Kf2 f6 37.Ke2 fxe5 38.Kxd1 exf4 39.Rd2 Be5 40.Rd7 b5 41.Rxa7 b4 42.Ra8 + Kf7 43.Rc8 f3 44.Rxc6 Bg8 45.Rc4 b3 46.h4 b2 47.Rb4 Ke8 48.Rb5 f2 0-1

Was It Luck?

by Roger Uzun

I find it a bit astounding that Fritz 3 once again surprises the world (remember that Super GM tourney we all thought was somewhat of a fluke), and defeats all of the top computer chess machines in Hong Kong.

It beat, in head to head competition, both Deep Blue and *Socrates, both of whom have about 35-60x the speed of the Pentium 90 Fritz was running on. I think it shows one of 2 possible points:

1) There are some bugs in the *Socrates/Deep Blue software that really need to be looked at...maybe this would explain it.. But for the bugs to be present in both systems, and for Fritz to find the "bugs" 2 out of 2 times, seems unlikely.

2) Chess's massive possibilities are far more important, even to fast supercomputers, than I realized (remember the "magic" 14 ply goal), and no matter how fast your computer searches, you are STILL vulnerable to stumbling into the black hole of horizon effects, to the point that you cannot extricate yourself. I know from tinkering around with UChess on my OS/2 machine (modified Gnuchess I toy with from time to time), that the software often "stumbles" into winning lines before it realizes, and often "stumbles" into total losers before it can detect the problem...The fact that both *Socrates and Deep Blue may have done this very thing, stumbled into a total loser line far enough that they could not escape..means that it probably happens often to really fast machines as well..I mean *Socrates played 6 games, and found a way to lose to a slower machine 1 out of 6 times... really 1 out of the 1 time it played it, and similar analysis applies to Deep Blue.

I am beginning to think that Chess between *ANY* 2 computers can often be a luck thing..given that NO computer can guarantee it will not "stumble" into a total loser of a game, and get itself in so deep, there is no way back out..I always knew this was the case between relatively equal machines..but I suspected that a *MUCH* faster machine would be immune to this effect when playing its slower cousin..

BOTH *Socrates, and Deep Blue (Phoenix as well) have about 30X the search power of a Pentium 90..if not MORE, *EVEN* when you can grab an opening line which is very favorable (this takes a computer opponent who cooperates by having added lines to his color book which are CATASTROPHIC..and Deep Blue/*Socrates are mature pgms), the Pentium 90 should STILL lose or draw much of the time..because it cannot be expected to play flawlessly and against an opponent who can outsearch it

by 2-4 ply or more..you are *BOUND* to get hit somewhere in most games..and still lose/draw.

This *DID NOT* happen against Deep Blue, and (surprise, surprise) did *NOT* happen against *Socrates, in the very next game played.

Now either the gods of luck decided to play 1000 to 1 in Fritz's favour.. or something was tweaked with Fritz, so that it could gravitate towards games that "Super searching alpha beta machines" would likely lose, turning the horizon effect INTO Fritz's favour.

it was a bit more than "2 lucky" openings, poor book choice by the Deep Blue/*Socrates team..I would bet almost anything on that. The same way the Fritz parameters were "tuned" against the Super GM's a few months ago to favor activity in its games vs them, something must have been tweaked here to favor lines which "sink" the deep searchers..but I cannot see how you could do that and get the deep searching machines to cooperate in any repeatable manner.

I refuse to chalk 2 victories in a row, against FAR more powerful engines, to "luck of the opening", especially since I know from experience, that "luck of the opening" can still be blown by slower, less deep searching, computers..The fact that it got good openings AND finished both games with wins...despite being outsearched by several ply each move..speaks volumes, I just cannot fathom that the software got "lucky" to that degree, twice in a row.

[Roger Uzun is a software engineer and chess aficionado. He developed an OS/2 and Amiga-based chess program called UChess which is based on Gnuchess 4PL74, a freeware chess program]

Fritz vs. Deep Blue

Opening Book vs. Opening Book

by Fabian Maeser

I don't know what games served to build the opening book of both machines, but I'm sure no human GM would ever play that horrible 0-0 move. All I've seen about it were comments like (13.0-0? Rg8 -+) in annotations of GM games. It would be very interesting to see how much time both machines used for their moves! I guess that after Rg8, Fritz had to find his moves by himself, so he didn't have that much book-advantage. Deep Blue just played this weak 0-0 at a time where no machine could see how bad it was.

BTW, 16.c4 seems another horrible move to me. I guess DB saw it was losing in any line, but I think 16.f3 to answer Qh4 with Qe1 offered better chances to survive. After 16.c4 any 1400 player would win with Black. (Apologies to all x players who would also have won... :-)

Finally a question: What "Fritz" was this? A new version "Fritz 4 beta..." or the same program everyone can buy? Does anyone know...?

More Fritz vs. Deep Blue

Opening Book vs. Opening Book

by Tim Mirabile

You need a strong human, who understands what types of positions the computer likes, to create the opening book by hand. Does the DT team have this? It seems like DT fell victim to a transposition problem, where Fritz played a move that took DT out of book, DT castled, and Fritz transposed back into a book line known to be very bad for white, but was usually reached by reversing the order of Fritz's moves just before and just after DT castled.

Sveshnikov gives Fritz's move 12...f4?! 13.g3! as a refutation, and 12...Rg8 13.O-O?! f4! 14.h3 Rg6! (14.Kh1 Rg6 was played)

DT's book probably didn't cover this transposition.

Still More Fritz vs. Deep Blue

Opening Book vs. Opening Book

by Robert Hyatt

In the 5th round game, which went as follows:

1. e4 c5 2. Nf3 Nc6 3. d4 cxd4 4. Nxd4 Nf6 5. Nc3 e5 6. Ndb5 d6 7. Bg5 a6 8. Na3 b5 9. Bxf6 gxf6 10. Nd5 f5 11. Bd3 Be6 12. Qh5 f4 13. O-O

The question was asked about this move for white (13. O-O)

It's not in any of my opening books, so I tried it on Crafty, which has an opening book made up of well over 50,000 GM games as well as lots of things like MCO, etc.

Blacks 12. f4 had only one response in Craftys opening book, 13. c3. However, it was only played in one game, so Crafty would not play it had it reached this position. I did let it search for a short while, and it preferred O-O-O from depth = 1 until I stopped it. This is admittedly short analysis, but until f5 for black, there were many options for black and white. I suspect either (a) black was taken out of book by 12. Qh5, or else 12. ... f5 was entered into the book for reasons unknown (perhaps as preparation to counteract Qh5 if DT had played it in the past.)

I may (for fun) let Crafty "stew" over the first 25 moves or so and post (or email) the output if anyone is interested.

It would be interesting to see where the game became hopeless (maybe with 13. O-O from the looks of things).

I have run through the game using Crafty to help me figure out what was happening. The only info I didn't have was the amount of time per move for DT (my early list of moves were *just* moves), as well as when DT exited the book. (move times would probably show this). In any case, when white castled, it castled right into a pretty strong attack. I have two possible explanations for this:

(1) the typical computer problem of a large castling bonus (or a large non-castled penalty) prompting the program to castle ASAP. with no regard for what's going on on that side of the board.

(2) book problem, such as having *one* game in the book where that castling move was played. Further inspection might well show that the game was lost by white.

I've been struggling with Crafty's book, since it is made up of (now) over 30mb of GM games (several million positions.) As a result, some of these openings are *bad* (remember, many GM games are against weak opponents, and playing these moves [the weak opponent's] can lead to disaster). The other night, Crafty (on ICC) played some 25 moves from it's book, and the first move out of book produced an evaluation of -5 (a rook down.) Investigation showed that there were two alternatives, one played 9 times and one played 3. The book algorithm refuses to play a move that was played less than some threshold limit (was 5 that day). A neat bug, however, tried to sort the book move list (which had two moves in it, with the "move-count" set to two initially and reduced to one because the 2nd move was below the threshold of times played). I then "sorted" a list of length one, which cleverly moved the 2nd move up and the first move down. As a result, it played the "bad" move that immediately lost. I found something similar in two other games (bug now fixed -- :^)). As you can see, playing moves "from a book" is filled with danger - typos, outright blunders, even opening theory books have bad moves that are (were) claimed to be good.

The biggest "tension-breaker" when Cray Blitz would play in a tournament was always after getting out of book and having the search produce a "reasonable" evaluation, letting us know that we hadn't followed a lost line. If you go back through all the games Blitz/Cray Blitz played in the last 20 ACM tournaments, you will find *several* where it was a pawn down with no compensation (and *not* gambit lines either!)

Judging from the way DT played against *Soc and HiTech, it was simply unlucky in its opening choice. I suspect that Hsu was spending more time on the "code" than on the "book". (I've been there...) As a result, a really amazing program was probably presented with a position that was lost against even a 2200 player. That's why the current world computer chess championship has such a high "luck" factor when compared to the human world championship cycle where the challenger/champion play a match. Such a format would downplay the book "hacks" and tend to highlight algorithm performance instead.

Looking back, we won the 1983 world computer chess championship with a 4.5/5.0 score (one draw), then repeated in 1985 with 4/5 (one loss in an early round.) The probability of making it through 5 rounds unscathed is really small. The accelerated pairings made it even worse by seeding the field and then pairing the top half against each other. As a result, Deep Thought didn't get to play a single weak opponent. If you look at the final crosstable, you will see what I mean. The final results were surprising, but didn't do anything to change my opinion about the best chess machines.

Drag Racing & Chess Computers

by Robert Hyatt

Take two drag racers of years past. One an in-line 6, hopped up to be sure, but producing (maybe) 300 horsepower. The other, the famous Mopar 426 hemi, blown, producing 2500 horsepower (minimum.)

They race on a drizzly day. The hemi lites the tires, gets blown away before leaving the line, and comes in second due to the "spot" given between different classes. Is the in-line 6 better? Nope, just happens to have won *that* day. Ditto for Hong Kong. Would any reasonable person put a great deal of money on *any* machine other than deep thought II in a match of (say) 30 games? Only if you had the money to throw away... The bet would make much more sense when betting on a single game.

Again, the way to compare programs is by the test of time, those that are *really* good prove it, those that aren't show up here and there, just to keep a marketing "presence" while avoiding the "light" as much as possible. When Fritz regularly plays with and beats IM/GM players in 40/2, I'll agree with you that it has reached GM strength. However, Hong Kong didn't prove anything except that which we already knew... Fritz is good. Good.. yes.. better than Deep Thought... not a chance.

The World Champion Rated 18th! Why???

by Kim Hvarre

SSDF (the Swedish Ratings List) is the result of devoted members (of The Swedish Chess Computer Organization) hard, steady and reliable work. An organization, which I happen to be a member of, too. This work has to now lead to 43238 games played by 140 computers at the speed 40m/2h. This under controlled conditions, i.e. the testers keep move records, etc.

Fritz3 is the world champion but that doesn't tell very much as the tournament is not based on an all against all paring and is limited to just 5 rounds.

Fritz3 has gained its position on the SSDF ratings list by winning only 58% against a middle rating at 2212, where e.g. Genius 3 (Pentium 90) has a score 68% against 2293. Not to mention same program at 486 66/50 platforms where the score is 67% against 2246!

The positions/strengths are constantly verified against humans, e.g. a tournament against a Swedish club (30 min. a game) where the humans had a middle rating of 2307 (ELO-level) and lost 23,5 - 8,5 to the computers, which scored: Genius 3: 7,5 - MCPro 4.0: 5,5 Fritz3: 5,5 and WChess 5,0.

SSDF is a private organization, which explains the fact that resources are limited = not Pentium 90 all over. But as you can see, Genius 3, MChess and Hiarcs are tested on 486 PC's, too - still with better results than Fritz3.

Does Fritz Deserve to be World Champion?

by Larry Kaufman

What is the meaning of Fritz 3 becoming the World Computer Champion, ahead of several Supercomputers and machines like HITech and IBM's Deep Blue built solely for chess, as well as ahead of higher-rated pc programs? It is my understanding that the version of Fritz that played in Hong Kong was the same or essentially the same as the commercial Fritz 3, except for the opening book which was modified for use in this event with lines prepared for individual opponents. This is more or less necessary in such an event since otherwise your opponents may prepare lines against your own book. Fritz managed to beat Deep Blue because the book produced a position in which the tactics were too deep even for it, and it made a fatal error on its very first move out of book. The book lines are one of the reasons for Fritz's success, but another factor is simply the huge chance element in a tournament of five (or six, counting the play-off game) rounds. Fritz 3 is a strong program, especially tactically (it is considered the deepest searching PC program, at the expense of chess knowledge), but after 673 games on fast 486 computers the latest Swedish "Ply" rating list rates it from 45 to 104 points behind WChess, Hiarcs 3.0, Rebel 6.0, MChess Pro 4.0, and Genius 3.0 on the same hardware. "Ply" will not even publish a rating for a program until it has played 100 rated games, considering smaller samples too inaccurate. In a tournament of 5 or 6 rounds, any strong program may emerge the winner due to chance factors, which is why I always pay more attention to long events such as the Uniform Platform event with some 30 rounds.

It is also my opinion that testing with fixed opening lines, each side playing one white and one black, is more valid than free-style games, because of the possibilities of opening preparation. Fritz 3 is to be congratulated for winning the event, but anyone who gives more weight to this six round event than to the 673 rounds played by Fritz 3 for "Ply" magazine is certainly only fooling himself. Not only is the "Ply" sample a hundred times larger, but the opening lines are selected randomly, and no lines prepared for individual opponents are possible.

Computer vs. Computer Accuracy

by Robert Hyatt

It has been frequently verified that computer vs computer matches will show which program is best. However, it has also been reported over and over that using computer vs computer games to extrapolate ratings has a high degree of error. Dating all the way back to Ken Thompson's first paper on predicting computer strength and including Hans Berliner's similar but more recent paper in one of the Advances in Computer Chess books. That said, I will wait for you to produce some "sane" formula that converts from the Swedish list to FIDE or USCF or whatever. The very instant that you come up with something "non-linear" like add 100 for 2300-2400, but add only 50 for 21-2300, etc., you are stepping into a famous trap, making existing data fit a known population by "bending" things until they fit smoothly. However, you can't stop there, but have to do some correlation tests as well and there the data will be seen as "unreliable." This is just about as futile as trying to convert ICC/FICS ratings to USCF or FIDE. You can come just about as close by trying to my telephone number into a rating. The two ratings are derived from different "pools" - USCF games

are played under quiet conditions with rewards for good performance. ICC/FICS games are played for fun, to try new openings, etc. The rating pool for ICC games is significantly lower than that for USCF or FIDE rating calculations.

Remember, the rating system tries to normalize your rating with respect to everyone else in the pool. If there is a paucity of GM players in the pool, the the high ratings on one end of the spectrum won't mean much since there is no one to contest them and lower them back to where they should be. Lots of math, lots of problems. Use the list to find out who's the best in computer vs computer games, but don't try to extrapolate anything else from it. The information is simply not there.

Computer vs. Computer Opening Book Preparation

by Andrew Fabbro

Do computers know which opponent they face in tournaments? In other words, do their handlers type in "Deep Thought" at the beginning of the match so the computer can pull out its anti-DTanalysis?

This would seem logical to me...masters certainly prepare for their games with knowledge of their opponents in mind and would play different openings against different players.

REVIEWS

Novag Review

by Larry Kaufman

Novag has two new models of interest, the "Jade II" and the "Zircon II". The Jade is a peg-style pocket travel set, with an h-8 processor at 13 MHz, 32k ROM, and 1k RAM. It has 48 regular levels plus 8 solve mate levels, and an opening book of over 13,000 "halfmoves", according to the manual. The price is expected to be just around $100. The program is an upgrade to that of the 10 MHz Ruby, which earned a C.R.A. Action rating of 2181, implying a 40/2 rating of around 2100 (according to my rule that Action ratings run about 80 points above 40/2 ratings). The new program shared by both the "Jade II" and the "Zircon II" was also submitted for a C.R.A. Action rating test at the 1995 National Open, and it emerged with an estimated Action rating a bit over 2230, implying about 2150 at 40/2. Of course this is far below Novag's strongest models, the Diamond and Sapphire, which CCR now rate at 2285, but they have much more memory which permits the use of Hash Tables, and hence they cost nearly twice as much. On my CCR "One-Hour Test" the Jade II scored 4 points (= forty rating points) higher than the Ruby, agreeing remarkably well with the results of the C.R.A. tests.

The Zircon II is the table-top version of the Jade II, with a price tag of around $130, making it the least expensive strong Expert table-top model on the market. They have all the same functions and features as well as the same chess play. Like other Novag models, the new ones are compact, excel in tactics, and have all the really important features though not so many as the more expensive Diamond and Sapphire. All four current Novag models are leaders in terms of performance vs. price, and are all recommended. One criticism is that Novag offers only 90 days warranty, while Saitek offers a full year.

Saitek/Mephisto Review

by Larry Kaufman

One new product of note since our last review is the "Mephisto Montreaux". It is an upgrade of the original Saitek RISC 2500, and hopefully it will be free of the problems that plagued that model. Although there are no game results yet, the CCR test puts the improvement at 50 points, and the Maresch endgame test shows a 30 point gain, so 40 points would be my best guess for the gain, which should suffice to make the Montreaux a Senior Master. Functions and features seem to be identical to the RISC 2500. Late word is that it has been delayed until at least September. With Mephisto Berlin Pro no longer available except by special order from Europe at excessive prices, the Montreaux will fill the demand for Senior Master models under a thousand dollars (preliminary price guess $700). Some Genius 68030 Modules are still available for around a thousand dollars for those with a suitable Mephisto board, and can be recommended for that price, since the Genius is close in strength to the R30, now priced above two grand.

Saitek has taken the upgraded program found in the "President" and in the GK-2100 and put it into the Travel Champion, thus creating the "Travel Champion 2100", priced under $200. Our latest figures put the improvement at 68 points, confirming our forecast in the last issue that the early results from Sweden showing only a 38 point gain were undervaluing the program. Our CCR problem test shows the gain to be quite a bit more than the difference observed in actual play. The new program has

twice the memory, which made possible the significant improvement. Moreover, while the original Travel Champion ran at only 70% of the speed of the GK-2000, the Travel Champion 2100 runs at the full speed of the GK models (10 MHz). This means that the TC 2100 should be just about a hundred points stronger than the original Travel Champ. The GK-2100 sells for around $250, while the older GK-2000 is still being sold for around $180. While these Saitek models are not price-competitive with the new Novag "Jade II" and "Zircon II", which are about the same strength as the Saitek 2100 models, they are a bit more luxurious and come with a full year's warranty vs. Novag's 90 days.

Those buyers who want a luxurious wood board and master strength play may consider the Renaissance Board with the Brute Force Module for under $800 combined. While this unit is not as strong as various Mephisto and Fidelity wood units of recent years, it is a good value for those who want a strong but not super-strong program, and all the luxury money can buy in terms of board and features.

Saitek recently began a C.R.A. Action test at the National Open in Las Vegas on two of its models, but made the mistake of sending unqualified operators, which resulted in several time forfeits and the resultant decision to cancel the test after the first day. I expect that a new test will be held with qualified operators soon.

TASC and Excalibur Review

by Larry Kaufman

The promised TASC R20 and R40 machines never materialized, but a new program, version 2.5, is now being sold in the R30. It is too soon to say how much stronger it is (if any) than previous versions. Unfortunately the new program is not yet available as the promised upgrade to existing machines, but hopefully it will be in the near future. The new R30s now come with lights on every square instead of only on the coordinates. As to which machine is the strongest dedicated model, the R30 or Mephisto Genius 68030, the current CCR rating list puts them about equal, but it must be remembered that older versions of the R30 are included in the rating, as well as blitz chess. The evidence suggests that the R30 is a bit stronger in standard chess, while Genius 68030 is a bit stronger in blitz chess. The R30 came out about fifty points ahead on our new problem test rating. Unfortunately the depreciation of the dollar vs. the German Mark has forced price increases for imports such as the R30, which puts it out of range for many potential buyers. Still, if you can afford it, the R30 is a very impressive model.

As for Excalibur, there are not yet any new models of interest to experienced players, but the Comet and Legend 2 remain the least expensive Expert level machines in the hand-held and table top categories respectively.

PC Software

by Nick Schoonmaker

There has not been much in the way of new software products since the last issue of CCR. It seems that everyone was busy getting out their newest and latest products just in time for Christmas shopping. The smoke has since cleared a little and it seems that in both computer vs. computer and computer vs. human competition, Mephisto Genius 3.0 is edging out the competition. It is ranked first by Ply in both standard and blitz chess. M-Chess Pro 4.0 has proved to be a significant improvement over its predecessor (version 3.5), moving up to second place in the Ply ratings and rivaling Mephisto Genius 3.0 for top honors. HIARCS 3.0 has also shown itself to be quite a bit stronger than its predecessor (version 2.1), and is now rated among the top several programs. These three (Mephisto Genius 3.0, M-Chess Pro 4.0, and HIARCS 3.0) just recently tied for first place in the 1995 Aegon tournament. And interestingly (See Larry Kaufman's article on this event.), each of these programs can make a valid claim to having the best overall computer versus human result.

WChess, which won in spectacular style at both the Fifth Harvard Cup and Uniform Platform tournaments last year, has since played many more games. Its more recent results place it at a more even keel with most of the other top programs. It is very strong, but it does not dominate as it did at first. Its Ply rating places it behind Mephisto Genius 3.0, M-Chess Pro 4.0, Mephisto Genius 2.0, REBEL 6.0, and HIARCS 3.0; but above the rest of the competition, including Chessmaster 4000 and Fritz 3.

The one new version of a top chess-playing program which has become available since the last issue of CCR is Mephisto Advantage software. This is looked at in the following review. HIARCS 3.0 is also reviewed in this article. Although it has been out since late last year, it was not made available for ICD to review in time for the last issue of CCR.

Mephisto Advantage

by Nick Schoonmaker

Mephisto Advantage seems to have directly resulted from development of the Kasparov PC Auto Chessboard

(see separate review), and in fact it comes packaged with that product. But aside from this program's integration with the Auto Chessboard, there is not much new with this software. Essentially, Mephisto Advantage features the same user interface as does Mephisto Gideon Pro, but its chess engine is that found in REBEL 6.0.

This is interesting because REBEL 6.0 was actually an upgraded version of Mephisto Gideon Pro, although it was developed by Schroder BV rather than by Mephisto. The Advantage program is the Mephisto equivalent upgrade to the same product.

When given the One-Hour CCR Test (provided in the last issue of CCR), Mephisto Advantage scored identically to REBEL 6.0 in every problem . This seems to confirm that its chess engine is indeed the same as that in REBEL 6.0, as advertised, and that it is not slowed down by other processing. In general, one must be careful when a manufacturer states that the chess engine in program 'ABC' is the same as that in program 'XYZ', because other processing (sizzling graphics, music, etc.) may bog down the new program and weaken its play. But this is not the case with Mephisto Advantage. Its playing strength is every bit the same as its powerful sister program, REBEL 6.0.

Mephisto Advantage has two opening books which also appear to have come from REBEL 6.0. The standard book contains about 400,000 opening moves. The smaller book, intended for slow computers, contains about 100,000 moves. However, Mephisto Advantage lacks a third opening book which is included with REBEL 6.0 that contains about 100,000 moves, taken from more than 1,000 games played by Kasparov. Like REBEL 6.0 and other programs, the Advantage software is prepared to play with future opening books.

When compared to REBEL 6.0 and some other top programs, Mephisto Advantage is lacking in its database functions. These functions seem unchanged from Gideon Pro, which allow games to be saved and loaded; and with games loaded, the user can go to specific moves or search for specific moves. Text comments can also be made to each move in a game. REBEL 6.0 has greatly expanded database capabilities over Gideon Pro, none of which are included with Mephisto Advantage. Depending on the user's needs, this may or may not be important. With a separate database program (e.g., TascBase, ChessBase, NicBase, etc.), this issue is a moot point.

Overall, Mephisto Advantage seems to be a solid choice, especially if the user is purchasing the Kasparov PC Auto Chessboard and does not require the program to perform powerful database functions.

HIARCS 3

by Nick Schoonmaker

HIARCS 3.0 is a powerful update to an already strong program, HIARCS 2.1. Since it became available in late 1994, HIARCS 3.0 has competed against both man and machine, proving itself to be a top contender among PC programs. Shortly before going to print with this issue of CCR, it tied for first place among computers in the 1995 Aegon tournament, along with M-Chess Pro 4.0 and Mephisto Genius 3.0. Although both of these other programs have a claim at the best computer performance (see Larry Kaufman's article on the tournament in this CCR), HIARCS 3.0 did indeed come out first in tie breaks, with a whopping FIDE performance rating of 2631. In the latest Ply ratings, it trails only behind Mephisto Genius (versions 3.0 & 2.0), M-Chess Pro 4.0, and REBEL 6.0; its USCF adjusted rating is 2498. This is a significant jump from both HIARCS 2.0, which has a USCF adjusted rating of 2422; and HIARCS 2.1, which has a USCF adjusted CCNS rating (no Ply rating available) of 2429. In the One-Hour CCR Test, running on a 33 MHz 386DX computer with 8 MB of RAM (See last issue of CCR for problem set and scoring method.), HIARCS 3.0 scored 62 points, compared to 51 points scored by HIARCS 2.1, for a predicted rating increase of 88 points (assuming 8 rating points for each point scored in the test). Identical results were obtained using hash table sizes of 128 kB (conventional memory only) and 7168 kB (extended memory). These results are all reasonably consistent with the manufacturer's claim in the on-line documentation (README.TXT file) of a strength increase from 80 to 100 points. (Note: As more data is obtained for various PC programs, the scoring method of the One-Hour CCR test may be modified accordingly.)

In addition to the improved strength of HIARCS 3.0 over its predecessor, there are other enhancements. Whereas HIARCS 2.1 allows the processing of EPD (Extended Position Description) files for databases of positions, HIARCS 3.0 handles these files, as well as PGN (Portable Game Notation) files for databases of games. This improvement follows the trend of other recent top PC programs, whose database capabilities are typically enhanced over earlier generations of programs. HIARCS 3.0 is also fully compatible with Chess 232. I detected no problems when playing the program with this product.

HIARCS 3.0 can utilize up to 31 MB of extended memory for hash tables. This option requires that the program be started without the computer using an extended or expanded memory manager. The program's documentation recommends that a system floppy disk be

created (without any memory manager) and used to boot up the PC before playing HIARCS 3.0. However, it seems that a cleaner method is to use the multiple configuration capability of MS-DOS 6 or 6.2. It is interesting that when I ran the One-Hour CCR Test using both 128 kB and 7168 kB for hash table size, HIARCS 3.0 scored identically in every problem. But keep in mind that each problem in this test comes from the opening and that the benefits of hash tables are not best realized in this stage of the game, but rather, in the endgame. The program's documentation suggests that for blitz chess, extended memory should not be used for the hash table.

A nice feature that is available when setting the level of the program is its incremental clock. In addition to setting the basic time control of 'x' moves in 'y' minutes, you can also specify a number of seconds to be added to each player's clock for each move, beginning at a certain move in a game. However, this feature is not available in sudden death time controls but only in time controls where a specific number of moves must be made.

Despite the strengths of HIARCS 3.0, there are some areas where it could be improved, primarily dealing with the user interface. Regarding the pull-down menus, as soon as you click with the mouse to change a selection, the menu disappears, not letting you see that the change has taken place. This is also the case when a selection can have more than two values. For example, you can select to play with the wide opening book, tournament opening book, or no opening book; and the selection is made through the options menu. If you call up this menu and you see that the tournament opening book is selected, you can click on this selection and then the menu disappears. You have no idea what action you performed until you select the menu again and see that no opening book is now selected. If you click on this, the menu will again disappear. Upon selecting the menu again, you see that the wide opening book is selected. Basically, once you make a selection, the menu disappears. To confirm that the program did what you wanted it to, you must select the menu again. This is really only a minor problem, but the pull-menus could have been better designed.

Also, although almost all options can be selected from the pull-down menus, the software developers curiously left out a menu selection for changing the colors on the display. Instead, you must use the '&', '*', '(', and ')' keys to cycle through the color selections for the black pieces, white pieces, black squares, and white squares respectively.

Six colors are available in each case. However, some of these color selections are very bright and there seem to be (to this reviewer) only a few color combinations which are pleasing to the eye.

Another observation is that if you choose to display analysis, the evaluation is not shown in units of pawns. Virtually every other PC program I have played with displays its evaluation in this manner. For example, an evaluation of '-1.5' might typically mean that a program thinks it is one and one-half pawns behind. But with HIARCS 3.0, a much larger value is shown. Upon digging through the manual, I found that a value of 128 corresponds to one pawn. Knowing this, one can easily perform the conversion (divide by 128). But it would be simpler to have the program do this conversion.

My complaints about this program are really quite minor but I thought the consumer should be aware of them, considering there are a number of fine choices among the top PC programs. HIARCS 3.0 has proven itself to be among the top several programs in tournament competition. It is a full-featured program with much to offer and is highly recommended.

Hiarcs 3.0 Features

reprinted from CCR v5n1

Tech Info:

- 386 IBM or Compatible or faster
- EGA/VGA/XGA video adapter
- 3 1/2" Floppy drive
- Dos 3.1 or higher
- 640K RAM
- Operates from Hard Drive or Floppy
- Has three installs
- Can use mouse or keyboard stroke

Features:

- Preset levels from Blitz to Tournament
- Infinite user settable time controls
- User settable incremental clock (as used in Fischer/Spassky match 1992
- Numerous game scan options to go instantly to chosen position
- Save and restore games in Hiarcs format
- Import/Export/Process EPD/FEN files
- Import/Export/Delete games in Portable Game Notation (PGN)
- Analyse game, detailing best lines, evaluations
- Find key point and show possible improvements
- User editable opening books
- Names openings
- Position set-up and editing
- Rates your chess ability in ELO points
- Special strength enhancement or reduction options
- User selectable search techniques: Selective, Very Selection, or Brute Force

- User selectable play style: Solid, Aggressive, Normal
- User extended memory for transposition tables
- Two player monitor with analysis, and next best move
- Choice of English/German/Spanish and French
- Transfer positions from Chess Assistant to Hiarcs
- Print move options
- Compatibility with Chess 232 board
- Large endgame knowledge including but not limited to:
- mate with bishop and knight
- exact king and pawn knowledge
- precisely who promotes pawn first
- king and queen vs. king and pawn on 7th rank
- active rook play in rook and pawn endgames
- wrong color square bishop and rook pawn endings
- opposite color bishop endings
- specialized endgame liquidation knowledge

Genius 3.0 Features

reprinted from CCR v5n1

Tech Info:

- 386 or faster
- VGA graphics
- 420k of free ram
- 3 1/2" floppy drive
- Can be played from Hard drive or floppy
- Has 3 installs
- Genius 3.0 can read all game files and user book files produced by previous versions of Genius.
- Operates with mouse or keystroke
- 3 Installations

New features on 3.0 that did not exist on 2.0

- Can read Chessbase data
- Can handle EPD files
- Displays opening names
- Can display moves in short figurine notation
- Can Autoload user opening books

Features:

- Plays white from bottom or top
- Position set-up
- Gives hints
- Restores previously saved game
- User book edit
- Next best
- Takes back all moves and traces forward
- Go to specific move in game
- Infinite level
- Easy levels
- Mate in... levels
- Fixed depth levels
- User programmable levels
- Sound on/off
- Resigns in hopeless positions
- Randomizer
- Random opening book choice
- Thinks on opponent's time on/off
- Hash tables on/off
- Pawn structure on/off
- Time adjust request
- Main book on/off
- User book on/off
- Autoload book - will load different opening books depending upon the opening that has been played
- Compatible with Chess 232 autosensory chessboard
- Choose from among 6 opening book styles: normal, human, gambit, classic, modern, blitz
- Three selectable playing styles
- Programmable selective search depth
- Adjustable piece value
- Adjustable contempt factor
- White and black clocks adjustable separately
- Analyses entire game placed in memory
- Computer can play itself
- Automatic restart of computer vs. computer
- Will process an EPD file and will add evaluations and analysis line to each position in the EPD file
- Search information on/off
- Lists all book moves that can be played from current position (on/off)
- Names openings (when played from hard drive)
- 64 switchable colors
- Chess piece high speed slide (for blitz chess) (on/off)
- Display moves in long or short notation
- Display piece types or text characters
- Dialog box with a file selection box is used to request a file name for all disk operations
- Prints moves and current position in text form
- Prints moves and analysis
- Database menus allows games from databases to be loaded into Genius
- Position set-up
- Extended hash tables - up to 32 MB
- Three language selectable (English/German/French)

M-Chess Pro 4.0 Features

Tech Info:

- IBM or Compatible
- 386 or faster processor
- Dos 5.0 or higher
- 640 Kbytes RAM
- VGA video
- 3 Megabytes of hard drive space
- 3 1/2" floppy drive (required for installation)
- Microsoft compatible mouse recommended
- 3 Installations

New Since M Chess Professional 3.5:

- Greater playing strength
- More opening moves
- Menu bar with pulldowns and dialog boxes
- Easy to use database
- Instant access to games from bulletin boards and on-line services
- Automatic learning feature improves 4.0 play
- Continual analysis mode

Features:

- Over 350,000 opening book moves
- Select from Tournament, Standard or Variety Openings
- Finds all transpositions
- Shows book moves for both sides
- Names the Opening
- Unlimited user programmable opening books
- User books can be printed
- Pulldown menus
- Animated VGA graphics with dialog boxes
- Choice of board/pieces colors
- Screen may show: your name, choice of notation, search progress, positions, evaluations, coordinates, chess clocks, move time, decision time, current and previous analysis
- Choice of English, Spanish, Italian, French, German, and Dutch
- Unlimited levels - time controls, mate-solving, sudden death, etc.
- Full-replay and auto-play
- Auto-analyze
- Log analysis and log time usage
- Find next best move
- Prints diagrams and games, set margins, ending move and notation, print to file
- Database with read/write support for Game Archives in Portable Game Notation (.PGN-files) plus Position Archives in Extended Position Description (.EPD-files)
- Hash tables to 10 Mbytes in Extended Memory with standard or linear access (to harness the full power of your computer).
- Three different selectable Styles of Play
- Intuitive Position Set-Up Mode
- Learning Mode allows program to learn from its experience
- Built-in Interface for external Auto-Sensory ChessBoard (Chess 232)

WChess Features

reprinted from CCR v5n1

Tech Info:

- IBM or Compatible
- MS-Dos 3.1 or higher
- VGA graphics or higher
- Minimum of 2 MB ram (can use up to 32 MB)
- Takes up 600k of disk space
- Needs 386 or faster processor (32 bit)
- If you have 8mb or more memory, no problem with RAM DRIVES or DISK CACHES
- On 4 mb or less it is best to remove RAM DRIVES and limit DISK CACHE to 512k or so
- At least one 3 1/2" high density floppy drive
- Needs hard drive
- Will run in MS-DOS window, however will play better from DOS prompt.
- 3 Installations

Features:

- It is copy protected and has two installs available.
- You can access the exact opening book used at the Harvard Cup
- Includes a file with 300 positions collected in the book Win at Chess
- Has a game file of the Harvard Cup games
- Has an output log of the games from the Harvard Cup
- Has a file with the early games of Bobby Fischer
- Has a file with the later games of Bobby Fischer
- Has a file with positions from the Bratko-Kopec Computer Test
- Has a file with some positions that demonstrate how WChess can learn from its games
- Has a file with mate positions
- Has a file with a collection of test positions by Larry Kaufman
- Will run in the MS-DOS window
- Operates with mouse, or keyboard, or cursor keys
- Turn sound on/off
- Can write results to an output file
- Hash Table on/off control
- Output file control
- Principal Variation Information Display control (allows you to choose from among four information levels that are visible on the screen: opening book choices, predicted moves, best move, score of the game, recommended line of play)
- Four different levels of randomness
- Underpromotion when desired
- Move forward or backward through game in progress
- Scroll through all games in game history
- Shows help screen when requested
- Auto Play Features operates without human interface
- Change color to move
- Demo Mode - a new game will automatically begin 5 seconds after end of last game (when in auto-play)]
- Easy Mode (WChess does not think on your time)
- Invert Board (for black on bottom)
- Next Best Move (WChess will take back its move and show second best, then if asked, third, fourth, fifth, etc.)
- Before erasing game just completed, WChess will automatically send it to a file
- Referee Toggle allows human to scroll through moves with WChess thinking until the program is asked to
- Position and Problem Set-up

- White and Black clocks may be set seapately for handicap purposes.
- WChess will analyse an entire game without human interface and export results to a file
- Tournament Levels (40 moves in your specified time)
- Sudden Death Levels (All moves in specified time)
- Average Time Levels (Will average the displayed time for each move)
- Fixed Time Levels (Will use displayed time for each move)
- Fixed Depth Levels (Will look requested depth and give response)
- Novice Levels (Purposely Plays Weaker)
- User Time Levels (You may set average time per move from 1 - 999999 seconds)
- Solve Mate Levels (You specify the depth; WChess will find the shortest mate possible)
- Import/Export Games
- Import/Export Positions
- Learns from its mistakes
- WChess makes allowance for direct output to a printer
- WChess will operate in conjunction with Chess 232.

Fritz3 Features

reprinted from CCR v5n1

Tech Info:

- IBM or Compatible 386 or higher
- VGA or SVGA graphics adapter
- Hard Drive (must reside on hard drive)
- 3 1/2" Floppy (for installation purposes)
- 640K RAM
- Dos 5.0 or higher
- 3 Installations

Features:

- May be played off the hard disk or floppy
- Mouse or keyboard entry
- Takeback move
- Replay moves
- Dropdown menus
- Force moves
- Play with black
- Hints
- Automatic replay
- Goto specific move
- Digital clocks
- Normal levels
- Infinite level
- Tournament levels
- User defined playing levels
- Handicap
- New book
- Setup positions
- Info boards, shows: main variation,current move, every legal move considered
- Save settings
- View evaluation of current move
- View search depth
- View moves left in current moves
- View opening books
- View main line
- Autoplay
- Computer vs. computer
- List games in database
- Load game from list
- Search for game in list
- Search for substrings
- Create your own databases
- Save games
- Replace games
- Delete games
- Transfer games
- List openings and their contents
- Overview all openings
- View number of games each opening was played in
- Remembers last opening
- Identifies opening
- Create new index
- Annotate games
- Enter variations
- Replaying variations
- Delete lines
- Analyze games
- Add notations
- Print games
- Print positions
- Print board
- Select language
- Animated pieces
- Change colors
- Message delay
- Change character height
- Sound on/off
- Show/hide coordinates
- Compatible with ChessBase
- Threatened pieces
- Postgame analysis
- ECO codes
- Hypertext
- Load next/previous games

Features of Fritz 3 not found on Fritz 2:

- Blitz Clock (allows for separate parameters)
- Tournament Mode (rates your play in ELO points)
- Automatic Analysis
- Analyse Next Best Move
- Book Options (Tournament, General, Gambit)
- Show Opening Book
- Contempt Value
- Variable Selectivity
- Mate in X
- Create Your Own Piece Square Tables
- A Learning Function
- Better Use of Hash Tables

REBEL 6.0 Features

Similar Features to "Mephisto Advantage"

reprinted from CCR v5n1

Tech Info:

- 80386 processor or higher
- VGA card and monitor
- 2 MB RAM
- Hard drive with at least 1.5 MB free disk space
- Dos
- Can run under Windows
- 3 installations

New Since Gideon:

- Chess engine translated to fast 32 bit machine language code
- New hashtable algorithm

Features:

- Choose 3 book openings libraries: Rebel - 400,000 moves, Small - 100,000 moves, Kasparov - 100,000 moves (taken from more than a thousand of kasparovs games)
- Program knows about 300 openings by name.
- Time-program will play on the selected average time
- Blitz-play the game within a fixed amount of time
- Handicap-same as blitz, but you reserve more time for yourself and less for the computer
- Tournament-play the game in the desired tournament level
- Ply-let the program play on a fixed depthM
- Mate-special level for solving difficult mate problems
- user-same as time, but you define your own favorite level of play
- Infinite-the program will continue evaluating until you stop it or a mate is found
- Analysis-combine infinite level with player player option
- Change the chess engine
- Program thinks on opponents time
- Optional brute force algorithm
- Optional combination mode. allowing quicker solution to tactical positions
- Choice of five different playing styles ranging from defensive to aggressive
- 3 levels of playing strength including novice
- Hashtables- maximum of 16 mb
- Database: create new databases; load,save,and delete games; reorganize database; search on names, text moves or positions; 6 different overviews available; convert games from gideon; convert databases from Nicbase and Chessbase
- Change screen settings
- Change names
- Show material
- Show hint
- Teacher-program judges current position
- Show variation
- Turn board
- Change colors
- Change pieces sets (3 different sets available)
- The program can be operated in English, German, and Dutch languages
- Set up positions
- Player-player mode
- Automatic play-the program will play against itself
- Analyze game or an entire (position based) database
- Goto move number-jump to any move you wish in the game
- Search for move-allows you to go to a move you still remember
- Go to end of game-Go to last move played in a game
- Replay game at one of 3 different speeds, allowing user interruption
- Write move comments
- Game to text file-Write the current game to an ASCII file
- Moves to printer-if activated, every move played in a game is output to a printer

Kasparov PC Auto Chessboard

How Does It Stack Up Against Chess 232?

by Nick Schoonmaker

As soon as a great new product is developed, it is usually the case that similar ones soon follow. This is also true with chess computer hardware. In the previous issue of CCR, we reviewed Chess 232, an auto-sensory chessboard which connects to a PC, allowing the user to play against any of several top programs. In the same issue of CCR, buried in the review of Chess Genius 3.0, mention was made of the Kasparov Autoboard.

At that time, this product was not yet commercially available. Now it is.The Kasparov PC Auto Chessboard, produced by Saitek Industries Ltd., is a fine alternative to Chess 232. The basic concept is the same: the user plays against a PC chess program on a real chessboard rather than staring blurry-eyed at a computer-generated image on a monitor. The Kasparov PC Auto Chessboard has an appearance similar to Chess 232; but unlike Chess 232, whose board is simulated wood made from plastic, the Kasparov PC Auto Chessboard is made from the real thing - wood. Its pieces (like those with Chess 232) are also made from wood. Both the board and the pieces are slightly smaller than those with Chess 232, where an entire row of eight squares measures 12.5" and the King's height is 2.75". With the Kasparov PC Auto Chessboard, an entire row of eight squares measures 11.6" and the

King's height is 2.5". This is not a big difference but it is noticeable when the two machines are side by side.

Although both Chess 232 and the Kasparov PC Auto Chessboard are very similar in concept, the consumer should be aware of several differences in implementation. To begin with, the Kasparov PC Auto Chessboard connects to a PC in a different manner.

Chess 232 connects to a serial port (the kind used by most mice) but the Kasparov PC Auto Chessboard connects to a parallel port (the same as used by a printer). With computers that have only one serial port that is already being used for a mouse, the mouse must be disconnected for Chess 232 to work. This is not the case with the Kasparov PC Auto Chessboard. There is no interference with a mouse. But if there is only one parallel port (as is with most PCs) and it is connected to a printer, the printer must be disconnected before using the chessboard. To get around this minor inconvenience, one may wish to purchase a simple mechanical printer switch box to share the parallel port with both devices. However, the manual for the Auto Board cautions that the total cable distance between the PC and the board should be no greater than 8 ft.

Chess 232 includes a floppy diskette which contains software that allows many of the top PC programs to be played on the chessboard. The Kasparov PC Auto Chessboard is different. No separate software programs are required for compatibility with PC chess programs. Instead, the chess program itself must be inherently compatible with the board.

Such is the case with Mephisto Genius 3.0 and Mephisto Advantage. The latter is included with purchase of the Kasparov PC Auto Chessboard. Saitek claims that the board is also compatible with Rebel 6.0, Fritz 3, Kasparovs Gambit, and Zarkov.

What is important from a human viewpoint is the user interface. Chess 232 includes a control box for performing various functions with the chessboard. These include starting a new game, taking back moves, selecting player-player mode, inverting the chessboard, switching sides, forcing the computer to move, etc. However, no control box is used with the Kasparov PC Auto Chessboard. Instead, for various functions the chessplayer simply performs whatever keyboard or mouse actions are normally used for the particular chess program which is running on the PC. This eliminates the need to learn how to use a new control box. It is effortless playing against the Auto Chessboard. All you have to do is start up the program you wish to play against and make your move.

However, for those chessplayers who own several PC chess programs, one advantage of the approach taken with Chess 232 is that there is a common user interface for all of the programs. In each case, the buttons on the control box perform the same functions.

A nice feature of the Auto Chessboard is that some functions are automatically handled by moving pieces on the board. For example, with either Mephisto Advantage or Mephisto Genius 3.0, a new game is started by setting up the pieces on their original squares; it is not necessary to perform any mouse/keyboard operations. This is the case even if you are in the middle of a game and wish to start a new one. In a similar manner, to take back one or more moves when playing against Mephisto Advantage, you simply play the move(s) in reverse order on the chessboard; it is not necessary to perform any mouse/keyboard operations. It is interesting to note that this is not the case with Mephisto Genius 3.0, which requires use of the mouse or keyboard to take back a move.

When I played against Mephisto Advantage with the Auto Chessboard I received for review, a pre-production model, I noticed one deficiency in how the two products are integrated. When I selected the 'Turn Board' option in the program in order to play with the black pieces, the Auto Chessboard continued to recognize that the white pieces were on my side of the board. This occurred despite the fact that the display on my monitor correctly showed the black pieces at the bottom of the board. I could find no way to switch colors on the Auto Board when playing Mephisto Advantage. However, this feature worked fine when playing against Mephisto Genius 3.0 on the Auto Board. Upon selecting the 'Invert Board' option from the program's 'Display' menu, the board correctly sensed that the black pieces were on my side. I hope that the problem with this feature when playing against Mephisto Advantage will be fixed with an updated version of the board or software. I suspect it is probably a software problem since this feature works properly with Mephisto Genius 3.0 software.

Aside from the minor compatibility issue of not being able to invert the board when playing against Mephisto Advantage (not a big deal because you can still manually turn the board around yourself), this product seems to operate flawlessly. I detected no other problems while playing many games played with both Mephisto Advantage and Mephisto Genius 3.0.

The Kasparov PC Auto Chessboard is a fine new product which rivals Chess 232. It greatly adds to the enjoyment of playing against a top PC chess program.

Feature Comparison

Chess 232 vs. Kasparov Auto Chessboard

Feature	Chess 232	Kasparov AutoChessboard
Current compatibility with chessplaying programs	Mephisto Chess Genius 1.0, 2.0 & 3.0 M-Chess Pro 4.0 Rebel 6.0 Hiarcs 3.0 Kallisto WChess Fritz 2 & 3	Mephisto Genius 3.0 Mephisto Advantage Fritz * Rebel 6.0 * Kasparovs Gambit * Zarkov * * Claimed by Saitek but unverified in testing
Chessplaying program included with purchase	None	Mephisto Advantage (same chess engine as Rebel 6.0)
Installation software required?	Yes	No
Chessboard: Material Size	Plastic (simulated wood) 12.5" x 12.5"	Wood 11.6" x 11.6"
Chess pieces: Material Size (King height)	Wood 2.75"	Wood 2.5"
Control Device	Separate box	No separate box required (standard keyboard/mouse controls for particular chess program being used)
PC connector type	Serial port	Parallel port

More About The Kaparov PC Auto Chessboard

"Play a modern game of chess the traditional way"

by Jeff Rainbolt (Saitek)

The Kasparov PC Auto Chessboard was developed by Saitek to satisfy the needs of the "poor" PC Chess Software enthusiast who was fed up of going cross-eyed staring at the PC monitor for long periods of time. The Kaparov PC Auto Chessboard allows you to play on a beautiful wooden board with hand crafted pieces, while enjoying the challenges of PC Chess Software. The PC Auto Chessboard utilizes reed switch technology which allows the user to play Blitz Chess, and make slide captures with ease. No pressure is necessary!

The PC Auto Chessboard comes with the Mephisto Advantage software which incorporates the Rebel 6.0 World Champion Chess Engine, a $150.00 retail value, free (for a limited time) when you purchase the Kasparov PC Auto Chess Board. The Mephisto Advantage has an ELO rating of 2400 (2600 USCF) when run on a P90, and a library of 400,000 openings. Nick Gibbons, Executive Vice President of Saitek, says, "The Kasparov PC Auto Chessboard comes with a program that will challenge the most advanced players and still it remains versatile because of its compatibility with existing and future chess software. We have bridged the gap for all players."

The board is easy to set up and user friendly. It is connected with the PC through the printer port. The player simply selects the Kasparov Autoboard from a pull-down menu and the software takes over, communicating with the board by lighting the necessary LED's to match the game to the screen.

[Jeff Rainbolt is a Marketing Executive at Saitek Industries Ltd.]

WCHESS

Where It Has Been
Where It's Going

by David Kittinger

The most significant result for WChess since winning the Harvard Cup tournament with the sensational score of 5 out of 6 versus strong American Grandmasters, is a tournament held in Aubervillier, France in February of this year. The tournament was 12 rounds and included 18 Grand Masters. WChess finished in 8th place with a score of 10.5 of 12 and a performance rating of 2581 ELO. Seven players were tied for first with 11 of 12. Against Grand Masters, WChess scored 3 points out of 4 including a win over former World Championship Candidate Andrei Sokolov. As at the Harvard Cup tournament, WChess was undefeated, winning two games and drawing two games versus the GM's. In this same tournament the Novag Sapphire scored an impressive 8.5 with a performance rating of 2418 ELO.

WCHESS - Its Future

Getting WChess to market since the Harvard Cup has taken up a good bit of my time. However, I have investigated numerous ways of improving the search and evaluation. A large problem in computer chess is assessing program changes. Neither suites of test position nor autotesting is totally satisfactory for providing a clear indication that a program change or enhancement is an improvement. There are principally three areas for changing a chess program - static chess knowledge added to a 'front end' which is evaluated at the beginning of each search, dynamic chess knowledge which could be evaluated at each node during the search, and dynamic search knowledge.

Static chess knowledge includes opening book knowledge, endgame databases, and such portions of king safety, mobility, pawn structure etc. which might be made available to a program by way of piece value tables. Adding static knowledge to a program ' for the most part a plus. However, there can be drav ıcks. Take something which one would assume to be only a plus for the computer - adding opening book moves. Drawbacks include adding opening book lines which are not suitable for the program or even forcing the program to play a particular book line when, in fact, the program may have discovered a better line of play if allowed to think for itself! Adding end game databases carry the cost of accessing the data base during the search, however, this cost is normally balanced by the accuracy of the database evaluation and the subtree reach saved by looking up the node value. Changing scores in the piece value tables for particular positions or piece configurations carries the possibility that in some positions the scoring change may be applied where it is detrimental.

Matters become more complicated when adding dynamic chess knowledge. First there is the fixed linear cost evaluation. For example, adding a dynamic evaluation term for 'knights on holes' will improve the computer's play in many positions. However, *ALL* positions are penalized to a small amount by the time required to calculate if a knight is on a hole. Furthermore, giving a bonus for knight on a hole might make the program focus too much on this particular term in certain positions instead of a different strategy.

The second part of dynamic knowledge involves modifying the search itself. Examples would be singular extensions, forward pruning, out of check, extending on the recaptures and search window size. Small changes in any of these search features can lead to significant search changes. The trade-off for increased searching is finding tactical or positional moves an iteration or more earlier. However, it can be very difficult to quantify the impact of small changes to the search.

The above discussion is just to help enlighten the reader as to why chess programs do not enjoy a continuously upward curve in playing strength. Even though I've been investigating several promising areas, nothing to date has caused a significant increase in the playing strength of WChess. The most likely area is getting more evaluation done within the search so reducing the size of the quiescent search. I am for now fairly pleased with the tactical play of program and think the most progress is to be made in refining the positional evaluations.

There will also be a Windows version of WChess in the not too distant future.

HIARCS 2.1 - HIARCS 3.0

by Mark Uniacke

The development of Hiarcs 3.0 turned out to be a very interesting experience. Before I go into detail, for those of you who know little about HIARCS, here is some background information. HIARCS is written purely in ANSI C on a spare-time basis. The chess engine is written entirely by Mark Uniacke. The PC User Interface is written by David Hattchett and the Mac User Interface by Clive Thomson. The chess engine is portable to a number of

platforms. In fact, versions of HIARCS have been running on DEC VAX, Sun Sparc Station, Commodore Amiga as well as the 2 product platforms of the PC and Mac.

HIARCS consists of about 35000 lines of ANSI C code. The program uses a modified aspiration alpha-beta negamax search together with the application of many selective search extension heuristic to enable in-depth analysis of criticle variations. HIARCS places a heavy emphasis on positional evaluation even at the cost of reduced search depth.

The program also incorporates a sophisticated quiescence search to resolve tactile uncertainties at the leaf node evaluation stage. HIARCS uses specialized endgame knowledge to improve its strength in a number of endgames which would otherwise require considerable search effort.

A short time after HIARCS 2.1 had won the World Microcomputer Chesss Software title I set about working on the next commercial version. I always keep an updated list of new ideas to try and there were a number I wanted to include in HIARCS 3.0.

Its knowledge of pawn play and its understanding of certain tactical situations were two areas in particular that I knew could be improved. There were also many endgame improvements I had in mind. Some changes were architectural in order to keep the speed of the program up while maintaining even more chess knowledge.

All was not plain sailing as it took until April '94 for versions 2.3 and 2.43 to be getting better results than their 2.1 relative. By August '94 version 2.7 had not really improved much if anything but was entered into the Uniform Platform PC tournament where it came in 2nd behind WChess but ahead of Mchess.

I made some useful improvements in the following couple of months to the evaluation and entered version 2.87 into the Harvard Cup in October '94. Although I was much happier with version 2.87, it was playing too passively. Despite having a good start, HIARCS ended up scoring +0-2=4 which was disappointing.

All the many new user features for 3.0 were finished by this stage including PGN, EPD, new HSV formats all supported, fast book editor including large and wide opening book of 70000 positions, plus much more.

So after further minor changes were made to the chess engine, we decided to see how much stronger than version 2.1, 2.89 really was before its release. So a match was played between the versions. I was really shocked to find 2.89 could not achieve a positive score against 2.1 despite having a better overall rating against other programs.

These setbacks made us delay the release of HIARCS 3.0 until the problems could be sorted out. There followed a hard month of going through every change between HIARCS 2.1 and 2.89 and evaluating its effectiveness.

The exhaustive approach paid dividends after a few weeks, when a number of changes to the evaluation function were found to be hurting the program badly. The worst offender was the new mobility scheme which seem logical but affected the program's performance adversely by some 70 ELO.

From this work, progressively better new versions were produced between 2.91 and 2.98. Finally 2.98 was put through its paces in large-scale testing and scored 70% against both version 2.1 and version 2.3. It also improved its performance against all other opponents. It has also recovered a never-say-die playing style which is quite active. The best style of play was generally found to be Aggressive.

Finally HIARCS 3.0 was ready for release!

HIARCS 3.0 on a 486/50-66 currently rates at ELO 2319 on the Swedish Rating List after 289 games. This is 111 ELO points above HIARCS 2 on the same SSDF rating list. HIARCS 3.0 won its individual encounter with Genius 3 also on a 486/50-66 by 10.5-9.5.

Rebel - The History

by Robert Kemper (Schroder B.V.)

Ed Schroder, born in The Hague, Holland has been commercially active with developing computer chess software since 1985. Since 1988, Ed has been ranked amongst the best computer chess programmers in the world. Proof of that was (after a few second places) his victory in Vancouver in 1991 where he, for the first time, became the World Champion in the category of Microcomputers. The following year, in Madrid, an improved version of his program was even able to win the World Champion title in all classes.

This performance was unique: it was the first time that a microcomputer program had won this title. In the past, this title was alway won by a mainframe computer. This was not only a confirmation of Ed Schroder's qualities, but also proof that today's commercial chess programs are able to beat their bigger and super-fast brothers.

In the last few years Ed has been assisted by two other specialists, Jeroen Noomen, who is (and, indeed for many years previously, has been) responsible for the opening books of Ed Schroder's programs, and Rob Kemper, who is responsible for the graphics and the I/O.