

SELECTIVE SEARCH 89

THE COMPUTER CHESS MAGAZINE

Est. 1985
Aug-Sep 2000

Editor: Eric Hallsworth
£3.75



SKY's chess is improving quite well, though it doesn't look as if she's ever likely to be a match for the really top players, as I am currently beating her

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- **SUBSCRIBE NOW** to get a REGULAR COPY of the LATEST ISSUE and RATING LIST mailed to you as soon as it comes out! My address & phone details are shown below. Please state the no. of the FIRST ISSUE you wish your sub. to cover.
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- **PUBLICATION DATES:** Early Feb, Apr, Jun, Aug, Oct and late Nov (incl. annual BEST BUY Guide).
- **ARTICLES, REVIEWS, GAMES** sent in by Readers, Distributors, Programmers etc are *welcome*.

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■ **SELECTIVE SEARCH** is produced by **ERIC HALLSWORTH**.

All CORRESPONDENCE and SUBSCRIPTIONS to Eric please at The Red House, 46 High St., Wilburton, Cambs CB6 3RA. Or E-MAIL: eric@elhchess.demon.co.uk

■ All **COMPUTER CHESS PRODUCTS** are available from **COUNTRYWIDE COMPUTERS**, Victoria House, 1 High Street, Wilburton, Cambs CB6 3RB. ☎ 01353 740323 for INFO or to ORDER.

■ **FREE COLOUR CATALOGUE** available. Readers can ring **ERIC** at **COUNTRYWIDE**, Mon-Fri, 11am-5pm

COMPUTER & PC PROGRAMS... THE BEST BUYS!

RATINGS for all these computers and programs are on pages 31-32. This is not a complete product listing - they are what I consider to be current **BEST BUYS** bearing in mind price, playing strength, features + quality.

Further info/photos can be seen in **Countrywide's CATALOGUE** - if you want one, ring or write to the address/phone on the front page.

Note the software prices! - some retailer prices seem cheaper, but there's a post & packing charge at the end!... **our insured delivery p&p is FREE.** Adaptors are £9 extra. **Subscribers Offer:** You can deduct **10% off dedicated computer prices** shown here if you buy from **Countrywide....** just mention **'SS'** when you order.

■ PORTABLE COMPUTERS ■ [por]

Kasparov

BULLET - Talking coach - £49 - talks + travels!

COSMOS - £99! - great value, 4½"x4½" plug-in board, strong Morsch program + info display

Novag

AMBER £139 - excellent plug-in, strong as Cosmos with great features and info display

SAPPHIRE2 £224 - v. strong calculator style, 32MHz H8. Incl. magnetic disc set - excellent

■ TABLE-TOP PRESS SENSORY ■ [ps]

Kasparov

BARRACUDA £79 - GK-2000 Morsch prog. Display etc, plus lid cover. This is great value!

COUGAR - £129! - the Cosmos program in 16"x11" board; good info display, recommended

Novag

TURQUOISE £149 - Amber in high-style board

EMERALD CLASSIC PLUS £179 - beautiful wood-look board, wood pieces+ display; strong!

DIAMOND2 £279 - true, strong high-knowledge chess on 32MHz processor. Very good features, big 120,000 opening book and **A1 for value!**

Mephisto

MILANO PRO £249 - Morsch at RISC speed, strong, good features and display

ATLANTA £379 - the fast hash-table version of Milano Pro=even greater strength. 64 led board

■ WOOD AUTO SENSORY ■ [as]

Kasparov

PRESIDENT £299 - top value wood board ever - good range of features, scrolling display

Mephisto

EXCLUSIVE all wood board, felted pieces with **MM6** - President program **£449**

with **SENATOR** - Milano Pro program **£649**

with **MAGELLAN** - Atlanta program **£749**

Novag

SAPPHIRE2 DE LUXE £449 includes Novag **Sapphire2**, magnetic board for travelling, lovely wood **UNIVERSAL board**, for home use, cables and adaptor. Excellent value... just marvellous!

■ PC PROGRAMS from CHESSBASE on CD ■

All run **INDEPENDENTLY** + analyse within C87.0. Great graphics, big databases+opening books, printing, max features. Win95/98

FRITZ 6 £39 - by Franz Morsch. Superb *new* Interface, Graphics and extra chess knowledge for Strength - a beautiful program, the no.1!

JUNIOR 6 £39 - features etc. as Fritz6. Strong, good positional chess with fast tactics!

HIARCS 732 by Mark Uniacke. An outstanding program running faster+stronger than ever! **£39**

NIMZO 732 £39 - by Donneringer. Great tactics

■ Other PC PROGRAMS on CD ■

SHREDDER4 (current World Champ) **£79.95.** The **MILLENNIUM 2000** package also includes **Genius6.5** and **Nimzo 2000**. On 6 CDs includes Endgame Databases and *lots* more!

REBEL-TIGER £39.95. *New* powerful 32-bit Windows program - this is a very strong, top 5 program with many features, statistics, game histogram, copy+paste printing, Winboard

REBEL CENTURY £39.95. Re-tuned for max. strength v humans. User-adjustable settings to change (improve?) play! Valuable analytical features incl. useful Game Overview

ENCYCLOPAEDIA OF CHESS for Rebel - **£30.** 1 million game database + massive opening tree

HIARCS7 - for PC and MAC! - **£49**

Also: **MChessPRO8** £69, **CS Tal2 Windows** £39. Please allow 7 days for delivery on these.

CLASSIC GAMES COLLECTION for PC!

SAGE 5000 DRAUGHTS CD (very strong program!), includes DRAUGHTS variations, 10x10, **Flip It (OTHELLO)** and other games! **£39!**

■ PC DATABASES on CD ■

CHESSBASE 7.0 for Windows **£115 !!** 32-bit high speed, multi-media, with 1.4 million games and 3 *free ChessBase mags on CD.* Position trees+ stats, printing. Includes Crafty eng. for analysis, but *buy Fritz6, Junior6 or Hiarcs732* to get top power analysis! The business!

■ PC CHESS TUTOR PACKAGES ■

Chess MENTOR - number '1' for chess training **COMPREHENSIVE:** novice/hobby **£59.95**

ADVANCED: best for SS readers! Strategy and Technique for study and pleasure **£59.95**

FULL DE LUXE: The **COMPREHENSIVE COURSE** plus *all 11!* available modules **£225**

■ SECOND-HAND & EX-DEMO ■

all with 9 month guarantee & incl. adaptor if appropriate

Mephisto **Mega4** [ps] **£95**

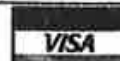
Mephisto **Nigel Short** [ps] **£149**

Mephisto **Montreux** [ps] **£269**

Mephisto **London 68000** [ps] **£349**

Mephisto **Berlin Pro 68020** [ps] **£399**

Mephisto **London Pro 68020** [ps] **£489**



NEWS & RESULTS - KEEPING YOU RIGHT UP-TO-DATE IN THE CHESS COMPUTER WORLD

Many thanks to everybody for your kind letters following *Issue 88* - I am very rarely ill, and have found out that, as one gets older, a full recovery takes rather longer than it used to! But I'm just about back to normal at last, and have appreciated all the good wishes I've received... so many they nearly made being ill worthwhile!

I also recognise that you've enjoyed reading some of the correspondence which I receive by e-mail and snail mail each day. I've included some more this time and, if you enjoy it again, keep it coming!

New Book - Scalable Search

Ernst Heinz, author of the strong amateur computer chess program **Dark Thought**, has written a major new book, which is no doubt vital reading for programmers, but also should be of great interest to anyone who wants to appreciate some of the deep thinking that goes into a computer chess program.

It is named '*Scalable Search in Computer Chess*' and a look at the chapter headings will alone give prospective readers a taste of the substance! I should also add that the book is written in English!

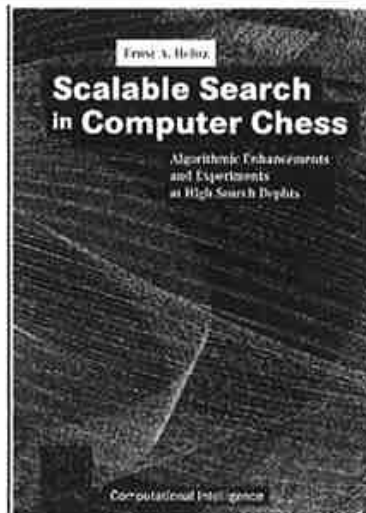
Preface

This book presents the results of our past two-and-a-half years of research aimed at increasing the scalability and performance of game-tree search in computer chess. We elaborate on our respective works in the areas of

- (I) selective forward pruning,
- (II) the efficient application of game-theoretical knowledge, and
- (III) the behaviour of the search at increasing depths.

The broad range of topics covered by the three distinct parts of the book seek to provide exciting material for everybody interested in the field of 'Computational Intelligence', regardless of their individual focus (researcher, student, or other).

The text does not require readers to know



Author: Ernst A. Heinz
 Title: "Scalable Search in Computer Chess"
 Subtitle: Algorithmic Enhancements and Experiments at High Search Depths
 Series: Computational Intelligence (ser. eds. Profs. Bibel and Kruse)
 Publisher: Vieweg Verlag
 [268 pages, 31 figures, 57 tables]
 ISBN: 3-528-05732-7

about chess and computer game-playing beforehand. The initial chapter entitled 'Computer-Chess Primer' introduces all the necessary basics and fundamentals thereof. The remaining chapters, however, go far beyond those topics. They show how to make sophisticated game-tree searchers still more scalable at ever higher depths.

Throughout the whole book, our high-speed and master-strength chess program DARK THOUGHT serves as a realistic test vehicle to conduct numerous experiments at unprecedented search depths. The extensive experimental evaluations provide convincing empirical evidence for the practical usefulness of the techniques presented by us. These results will certainly be of special interest to researchers and programmers of computer strategy-games alike (Chess, Checkers, Go, and Othello in particular). Last but not least, I like to mention that I am most grateful to the series editors for offering me the opportunity to publish my book under their auspices.

Ernst A. Heinz - September 1999

0 Computer Chess Primer, 22 pages.

- 0.1 The Game of Chess
- 0.2 Basic Search Techniques: *minimax*, *negamax*, *alpha-beta*, *quiescence* etc.
- 0.3 Advanced Search Techniques: *extensions*, *transposition tables*, *move ordering*, *iterative deepening*, *aspiration search*, *forward pruning*.

Part 1: Forward Pruning without tears!

- 1 Adaptive Null-Move Pruning, 12 pages
- 1.1 Introduction

- 1.2 Related work
- 1.3 Standard Null-move pruning
- 1.4 Recursive Adaptive Null-move pruning in theory and practice
- 1.5 Conclusion and Appendix with Experimental set-up

2 Extended Futility Pruning, 12 pages

- 2.1 Introduction
- 2.2 Normal Futility Pruning in theory and practice
- 2.3 Futility Pruning at Pre-frontier nodes, in theory and practice
- 2.4 Limited Razoring at Pre-frontier nodes, in theory and practice
- 2.5 Conclusion and Appendix with Experimental set-up

3 AEL Pruning, 12 pages

- 3.1 Introduction
- 3.2 Combined AEL Pruning in theory and practice
- 3.3 Test Games: Self-play and Nunn matches
- 3.4 Conclusion and Appendix with Experimental set-up

Part 2: Integration of Perfect Knowledge

4 Efficient Interior-Node Recognition, 18 pages

- 4.1 Introduction
- 4.2 Fundamentals of Interior-Node Recognition
- 4.3 Recognizers and Transposition Tables
- 4.4 Efficient Recognizer Detection and Selection
- 4.5 Recognizer Functions with Implementation Example
- 4.6 Discussion and Conclusion

5 Index Schemes of Endgame Databases, 16 pages

- 5.1 Introduction
- 5.2 Related Work
- 5.3 Indexing Endgame Databases without Pawns
- 5.4 Indexing Endgame Databases with Pawns
- 5.5 Further General Indexing Improvements
- 5.6 Discussion and Conclusion
- 5.7 Appendix -- Thompson's Endgame Databases
- 5.8-9 Appendix -- Edwards' Tablebases & Nalimov's Tablebases

6 Knowledgeable Endgame Databases, 24 pages

- 6.1 Introduction
- 6.2 Knowledgeable Encoding
- 6.3 Knowledgeable Probing
- 6.4 Knowledgeable Scoring
- 6.5 Knowledgeable Querying

- 6.6 Knowledgeable Databases in Practice
- 6.7 Related Work, Infallible Rule-Based End-game Play in Chess
- 6.8 Discussion and Conclusion

Part 3: Search Behaviour at Increasing Depths

7 DarkThought Goes Deep, 22 pages

- 7.1 Introduction
- 7.2 Search Depth vs. Strength of Chess Programs
- 7.3 Newborn's Original Hypothesis Revisited
- 7.4 Corrected Test Positions
- 7.5 Experimental Results
- 7.6 Conclusion
- 7.7 Appendix -- Experimental Setup
- 7.8 Appendix -- Bounds on the "Best Change" Probabilities
- 7.9 Appendix -- Published Results, Crafty 1997

8 Modeling the "Go Deep" Behaviour, 12 pages

- 8.1 Introduction
- 8.2 General Considerations
- 8.3 Modeling the Behaviour of Crafty
- 8.4 Modeling the Behaviour of DarkThought
- 8.5 Discussion and Conclusion

9 Self-Play Experiments Revisited, 23 pages

- 9.1 Introduction
- 9.2 Statistical Analysis of Self-Play Experiments
- 9.3 Self-Play Experiments in Computer Chess, 1982 - Belle (Thompson), 1983 - Belle (Condon and Thompson), 1988 - TechMate (Szabo and Szabo), 1990 - Hitech and Lotech (Berliner et al.), 1994 - Zugzwang (Mysliwicz), 1996 - Phoenix (Schaeffer), 1997 - The Turk (Jung-hanns et al.)
- 9.4 Self-Play Experiments in Computer Checkers, Chinook (Schaeffer et al.)
- 9.5 Self-Play Experiments in Computer Othello
- 9.6 Conclusion

- Perspectives on Future Work

Part 4: Appendices

A How DarkThought Plays Chess

- Introduction, Implementation History, Bitboard Engine, Bitboard Infrastructure, Search Engine, Node Expansion, Extension Heuristics, Search Parameterization, Evaluation Engine, Future Work

B Tournament History of DarkThought

- World Championships, AEGON Man vs. Machine Tournaments, Public Exhibition Matches

C DarkThought and Test Suites

- Solution Times for BS-2830, Solution Times for

BT-2630, Solution Times for LCT-II, Measured Peak Speed, Test Configuration

D DarkThought at Test Games

- Test Games vs. Strong PC Chess Programs, Games Played from Nunn Position #2 - 9, Selected Self-Play Games

E Bibliography

F Index

If any readers feel that my listing of most of the index is a bit over-the-top, I apologise. However I believe most will be very interested to see the massive scope of the topic '*programming a computer to play chess!*'

Independent reviews of the book

"The results of extensive experiments on scalability and performance of game-tree searching have been laid down in this excellent book. [...] I warmly recommend this book to any serious computer-chess enthusiast. The style of writing is very clear, and hardly any programming experience is required to enjoy most of this work. [...] As it is, the book offers good value for money. [...] Scalable Search in Computer Chess is one of the three best computer-chess books of the decade!" -- **Dr. Hartmann**, March 2000

"The recently published book Scalable Search in Computer Chess represents the state-of-the-art in the field at the beginning of the new millenium. [...] The book is compulsory reading material for all (prospective) chess programmers. [...] Thus, Ernst Heinz has created a true computer-chess classic." -- **Dr. Donniger**, April 2000.

Ordering and Price Information

Ernst concludes: The book features a suggested retail price of 98 DM (roughly 50 US-\$). I know that this is not cheap. :-)

But although I sincerely intended the book to cost much less, there was no chance to hit a lower price point for a printed volume in a specialist area such as computer chess (even if I renounced all royalties). So, please do not blame me for the price.

Morgan Kaufmann Publishers distribute the book in the US and worldwide in all other countries except for Austria, Germany, and Switzerland. As of June 2000, it was available for online purchase from various URLs.

For full details, visit my web info page:

<http://supertech.lcs.mit.edu/~heinz/nodel.html>

or e-mail me at:

heinz@mit.edu

ChessBits news

An occasional visit to the *ChessBits* web pages is well worthwhile. Here is the latest *ChessBits* Rating List:



It continues to be very interesting, but again I must mention that it is based on a particularly wide range of playing time controls! These vary from G/15 to G/90, so includes a wider spectrum than even *Selective Search*!

We now allowing from 40/2 down to G/60, and even G/30 where both processors in a PC v PC match are 450MHz or faster (but not engine v engine matches at any speed, played on only one PC which means there's no thinking in opponent's time).

Back to the *ChessBits* list! As well as using a wide range of time controls, they also include different versions of various programs, e.g. 3 earlier versions of Chess Tiger before its launch as Rebel Tiger, the original '6' and new '6a' versions of both Fritz and Junior... and Deep Junior.

The ratings which will interest readers (which generally are about 30-40 Elo above the equivalent *Selective Search* figures) are as follows:-

2698 Fritz 6a

- an amazing rating... if they bring out a Deep Fritz as threatened, goodness knows what it will do!

2698 Deep Junior

- obviously a bit of a disappointment, especially as the figure is based on 274 games so must be considered close to reliable

2671 Fritz6

- 30 behind 6a, so the Fritz6-6a upgrade *is* an upgrade!

2648 Rebel Tiger

2642 HiarcS 732

2639 Program X

- there's a couple like this on the SSDF list - no-one yet has confided to me what they

are, so I can't help... sorry

2629 Shredder 4

2626 Nimzo 732

2624 Fritz 532

2622 Junior 6

- Note that this is the *original* Junior 6. I must say its low position here surprises me - I don't feel that it's quite as good as Fritz, but surely it's not far behind? Junior 6a, which was rated 2602 on the previous *ChessBits* list, has disappeared altogether (unless it's Program X, which I doubt)

2619 Junior 5

2616 Hiarcs 7 (original DOS version)

2609 Nimzo 2000

2593 Crafty 17.10 (80 games)

2590 M Chess Pro 7

2590 Shredder 3

2589 Genius 3

2588 Virtual Chess II

2581 Nimzo 98

2580 Hiarcs 6

2573 Rebel Century

2565 Genius 6.5

- Richard Lang won't be very happy seeing Genius 6.5 and 5 languishing lower than his Genius 3 version!

2549 Nimzo 99

2534 Crafty 16.15

2525 Fritz 4

2522 Rebel 10.5

2511 Zarkov 5

2490 Genius 5

2490 W Chess 2000

Deep Junior's turn at the Big Time!

Bearing in mind the quite different grading gap in the *ChessBits* and *Selective Search* Rating Lists, it will be interesting to see how **Deep Junior** gets on in the **Dortmund Super Tournament**, and compare it with [**Deep**] **Fritz's** results in the Dutch Champs and at Frankfurt!

It is just starting as I write these notes (mid-July) at the full 40/2 time control, and the field is 9 GMs and Deep Junior in another all-play-all! It's a very tough field, the 9 GMs are: FIDE World Champion Khalifman, Kramnik, Anand, Adams, Bareev, Leko, Akopian, Piket and Huebner!

Incidentally, a **Random Chess** match was played by **Deep Fritz** during the Dortmund event, against German GM **Yusupov**. The result was not a surprise to me... **2-0** to **Fritz**. Some anti-computer folk complain that it is the programs' big opening

databases which has largely enabled them to close in on the world's top players, but I beg to disagree - almost the opposite in fact.

The top IMs/GMs have an absolute wealth of knowledge about the inherent positional factors which arise in the many openings. They have a personal range from which they choose, and with which they are comfortable, and they have a great experience of the strategic themes and patterns which result. They will also quickly recognise an unpositional or out-of-place move within that context. If they can at the same time force the opening into paths which are unsuitable to a computer's style - blocked positions, misplaced pieces etc. - all the better... but the most important thing is that they know which pawns, pieces and squares are strong/weak, important/vital etc. and this counts for a lot!

But in Random chess, no-one is familiar with the position... the human has to try and work out a decent strategy, pawn set-up and piece development from scratch - he has to invent the opening for the random set-up in question... and the computer doesn't care!

It would not surprise me at all if Deep Fritz or Deep Junior were already the world's best at the Random game!

Frank HOLT: still busy!!

A couple of Issues ago we gave the full crosstables from Frank Holt's engine-engine testing with 4 *ChessBase* engines.

Although we don't include engine-engine results in the Rating List, the scores are still of interest, and Frank has played the series again, this time using the respective Fritz6a and Junior6a upgrades.

See how they all compare!

P2/400 Tournament time controls

	Old versions	F6	J6	H7	N7	/18
1	Fritz6	xx	4	2½	4½	11
2	Junior6	2	xx	4½	3	9½
3	Hiarcs732	3½	1½	xx	4	9
4	Nimzo732	1½	3	2	xx	6½
	New versions	F6a	H7	J6a	N7	/18
1=	Fritz6a	xx	3½	3	3½	10
1=	Hiarcs732	2½	xx	3½	4	10
3	Junior6a	3	2½	xx	3½	9
4	Nimzo732	2½	2	2½	xx	7

P2/400 Blitz time controls

	Old versions	J6	H7	F6	N7	/18
1	Junior6	xx	3	3	5½	11½
2	Hiarcs732	3	xx	3	3	9
3	Fritz6	3	3	xx	2	8
4	Nimzo732	½	3	4	xx	7½
	New versions	F6a	J6a	N7	H7	/18
1	Fritz6a	xx	3½	4	4½	12
2	Junior6a	2½	xx	3	4½	10
3	Nimzo732	2	3	xx	3	8
4	Hiarcs732	1½	1½	3	xx	6

Celeron/433 Tournament time controls

	Old versions	J6	F6	H7	N7	/18
1	Junior6	xx	2	4	5	11
2	Fritz6	4	xx	3	3	10
3	Hiarcs732	2	3	xx	4	9
4	Nimzo732	1	3	2	xx	6
	New versions	F6a	J6a	H7	N7	/18
1	Fritz6a	xx	4	3	3½	10½
2	Junior6a	2	xx	4½	3	9½
3	Hiarcs732	3	1½	xx	4	8½
4	Nimzo732	2½	3	2	xx	7½

Celeron/433 Blitz time controls

	Old versions	F6	J6	H7	N7	/18
1	Fritz6	xx	3½	3½	4½	11½
2	Junior6	2½	xx	3	3	8½
3=	Hiarcs732	2½	3	xx	2½	8
3=	Nimzo732	1½	3	3½	xx	8
	New versions	F6a	H7	J6a	N7	/18
1	Fritz6a	xx	5	5	3	13
2	Hiarcs732	1	xx	4	4	9
3=	Junior6a	1	2	xx	4	7
3=	Nimzo732	3	2	2	xx	7

Computer Olympiad, Aug 19-28

The Mind Sports Olympiad and ICCA have confirmed that the Computer Olympiad plans are still on schedule.



Board games represented should include Chess, Shogi, Chinese Chess, 19x19 Go, 8x8 and 10x10 Draughts, Backgammon, Bridge and Othello amongst others. The 10 days of competition will also include Cribbage, Crosswords, Diplomacy, Mastermind, Memory skills, Poker and Scrabble etc.

Note that this is NOT primarily a computer event - its comprises a massive range of GAMES & COMPETITIONS for humans!

However there are COMPUTER TOURNAMENTS taking place (known as the **Computer Olympiad 2000**), and the Chess tournaments will include the ICCA's **World Microcomputer Chess Championship**, which will combine as an **Olympiad event**.

Other computer events should include Backgammon, Bridge, Chinese Chess, 8x8 and 10x10 Draughts, Go, Othello, Poker, Scrabble and Shogi.

The **5th. Computer Olympiad** events should take place from **August 21-25**, *though the detailed tournament schedule will not be announced until after the closing date for entries, which is August 7th.*

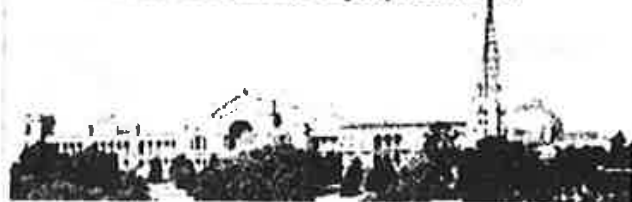
As I mentioned in an earlier issue of *Selective Search*, I had already booked a summer holiday for these dates a long time before I knew this would all be taking place. However I am keenly hoping to organise something so as to be there for at least one of the computer days.

The venue is **Alexandra Palace**, London. Further details may be obtained by sending a large stamped addressed envelope to:



Mind Sports Olympiad, 51 Borough Way, Potters Bar, Herts EN6 3HA, England.

Their Internet page for info. and schedule is:
www.msoworld.com/Olympiad/details.html



FRITZ IN THE DUTCH - THE LAST GAME!

Readers will recall that we 'stop-pressed' Fritz6's win over de Vreught in round 9 at the end of our SS/88 article. Because we knew in advance it would have a 1-0 over der Sterren by default, as he stated before the Tournament that he would not play against the computer, I was reckoning that, from a score of 7/10 Fritz should have a very definite chance of a top three placing.

The actual scores after 10 rounds were:

Pos	Player	Elo	/10
1	Van Wely	2646	8
2	Piket	2633	7½
3	Fritz SSS*		7
4=	Tiviakov	2567	6
	Van der Sterren	2526	6
6	Nijboer	2540	5½
7	De Vreught	2498	5
8=	Reinderman	2561	3½
	Van den Doel	2522	3½
10=	Bosboom	2461	3
	Van der Wiel	2558	3
12	Grooten	2393	2

The only possible problem was **John van der Wiel**! Languishing near the bottom in 10th. place he might be, but as a regular entrant in the old Aegon computer-human tournaments, it was known for certain that he's always been good against them!

So I doubt that programmer **Franz Morsch** was relaxing too much, even though faced with a so-called out-of-it bottom marker for its final game!

Van der Wiel - Fritz SSS*

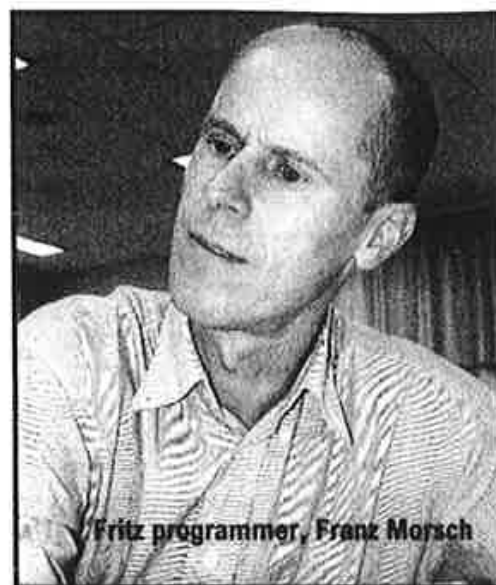
[D00: 1 d4 d5: Unusual lines]

1.d4 1...d5 2.c3!?

Doesn't quite put Fritz out of Book, but announces a solid strategy avoiding tactics

2...♟f6 3.♟g5 ♞e4 4.♟f4 g5?!

This has been played in serious competition, but not by Fritz (the commercial 'General' book only has c6). It's a weakening move, and my guess is that the



Fritz programmer, Franz Morsch

special Fritz tourney book has already finished and this was played by the F6 engine!

5.♟c1 h6N

Both 5...g4 and 5...e6 have been played here at a reasonable Tournament level, but I don't think this continuation has been seen before

6.e3 ♟g7

Watch this bishop – it will be a spectator throughout the game. Take a sneak look at all the remaining diagrams for this game, and you'll see what I mean!

7.♟d3 ♞d7 8.c4 ♞df6 9.f3 ♞d6 10.c5

White blocks the central pawns with a space advantage... which does not bode well for Fritz

10...♞f5 11.♞e2 g4 12.f4



12...♞d7

12...♞h4 might have persuaded White to play 0-0, and bring the game within easier 'computer comprehension'!

13. ♖bc3 ♜e6 14. ♞d2 ♙d7 15. b4 h5

Fritz commits itself to the kingside pawn storm, even though White hasn't castled yet (and may decide not to!)

16. a4

[16. ♖g3 ♖xg3 17. hxg3 ♖e4 18. ♙xe4 dxe4 19. ♙b2 offered a small but obvious advantage, but van der Wiel challenges Fritz on the issue of long term ♔ safety]

16...0-0-0?!

I must say this really surprised me. I've always felt that Fritz's tactical awareness for attacking the enemy ♔ and adequately protecting his own was as good as anyone's. It doesn't want to castle king-side after (over!)advancing pawns there, but I would have thought that its tactical ability would have been enough to avoid a positional blunder of this type, especially with White's queenside pawns already so far advanced. Maybe the equal count-up (3P v 3P) persuaded F6 it would be okay?!

16...h4 followed the theme of the computer's earlier play

17. ♙d1

Van der Wiel's patient handling of the position is most disarming. The Fritz evaluation jumps as, with its next move, it launches its pawn thrust against the fast disappearing White ♔!

17...h4 18. b5!



I do find situations like this particularly interesting. The top programs know that this is White's correct line of play – many would play b5 themselves – but their evaluations are all wrong! Their view of the position is that White will lose material, and this aspect influences them more than the longer (more important) consideration... the danger to Black's ♔

18...♙b8 19. ♞b1 h3 20. g3

The attack is easily blocked. Now Fritz has to retreat a piece in face of the

White's pawn attack

20...♙e8?!

I prefer 20...♙c8 – although it withdraws the bishop from the protection of c6, it would now cover b7

21. a5



An amusing picture. White's pawns are perfectly positioned: remember, with all other pieces off the board and unless Black's ♔ is near enough to intercede, White can play b6 and either his a or c pawn queens. In the meantime they also force Black to defend against potential mating threats

21...♙a8

Was 21...c6!? better If 22.b6 (and if 22.bxc6 ♙xc6) 22...a6

22. ♙e1

White doesn't want to force anything, or encourage exchanges which might free Black from his predicament, but waits to see if Fritz will make a mistake

22...♙d7 23. ♙f2 a6?

Immediately after seeing this Hiarc pronounced White +100. However even after its own preferred 23...c6, a 30sec. 'think' showed White +50 after 24.a6! bxa6 25.b6! so the programs are cottoning on to the difficulties Black faces

24. ♞c2

The same 24.c6 as in the above line would also have resulted in trouble for Black: 24...bxc6 (or 24...♖d6 25. ♞c2) 25.bxa6

24...♞b8

At first 24...axb5 seems good, but the danger to Black's ♔ in the face of White's piece power is seen in 25. ♖xb5 ♙xb5 26. ♞xb5 ♖e4+ 27. ♙xe4 dxe4 28. c6±

25. ♙d2

I don't think any of the PC programs would play the moves van der Wiel makes, in fact their evaluations jump back towards Black after nearly every one, and

then they slightly modify their critical view as they calculate a little deeper! But his control of the key part of the board increases every time, and Black's plight is probably already beyond redemption
 25...axb5 26.♖xb5



26...♗xb5

Best – and it lays a small trap!

Note that if 26...♗hc8? White plays 27.♕bc3!! threatening ♗b6. Can you see why cxb6 will not then be possible?

Let's follow it through briefly: 27...♗e8. I can't find anything else that does any better, so now 28.♗b6. Here...

[a] 28...♕d6 is best, but after 29.cxd6 exd6 30.f5 ♗e7 31.♕f4 White wins!

[b] If 28...c6? 29.a6! ♗bd8 30.axb7+ ♔b8 31.♗a2 and it's all over

[c] Worse still is 28...cxb6?? as mentioned above, and 29.axb6 ♗bd8 30.♗a2+ ♔b8 31.♗a7+ ♔c8 32.♗a8#. Black could delay the mate by various sacrifices, but the result ends up the same

27.♗xb5

Not 27.♗xf5? which might look tempting with the departure of the bishop from d7. However 27...♗a6! is a great response, and the best I can find is 28.♕c3 after which 28...♗c4 and, with the queen's arrival on a6, Black suddenly seems to have found adequate defensive resources

27...♕e4+ 28.♗xe4 ♗xe4

28...dxe4 is certainly no better, as White plays 29.♗hb1 threatening ♗b6, as in a line we looked at above

29.♗xe4 dxe4 30.♕c3

Another of van der Wiel's astonishing little quiet moves. I'm sure the obvious ♗a1 would have served at least as well, but I think the GM is taking delight in emphasising the computer's helplessness

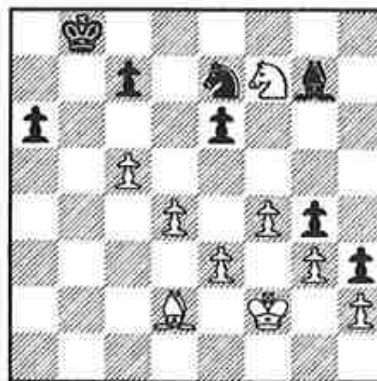
30...e6

If 30...♕xd4!? is better, then 31.exd4

♗xd4+ 32.♕e2 e3 33.♗b4! ♗xc5 34.♗c4 is still easily good enough to win
 31.♕xe4 ♕e7 32.♕g5 ♗hf8 33.♗hb1 ♔a7

I looked at 33...♕c6!? – it might have made White work harder. The continuation I'd suggest is 34.♗c3 ♕a7 35.♗5b3 c6 (if 35...♕c6?! 36.d5 ♗xc3 37.dxc6 bxc6 38.♗xb8+ ♗xb8 39.♗xb8+ ♔xb8 40.♕xf7 ♗xa5 41.♕g5 and ♕xe6 next should win comfortably) 36.♗b6 with a probably winning advantage. Possibly Van der Wiel (or one of my readers?) could find an improvement for White?!

34.a6 bxa6 35.♗xb8 ♗xb8 36.♗xb8 ♔xb8 37.♕xf7



A position similar to an earlier line of analysis, but with each side here having an extra minor piece

37...♔c8 38.♕g5 ♕d7

And in the move order chosen by Fritz (cp. that in my note to move 33) he at least gets to protect the e-pawn just in time! I think the computer has come out of his disadvantages through moves 20-30 as well as he could reasonably hope, so credit is due even though the effort is not sufficient to save the game!

39.♕e2 ♕f5 40.♕e4 ♔c6 41.♕f2 ♕h6 42.♗a5 ♗f6 43.♔d3 ♔d7 44.e4 ♗g7 45.♔c4 ♔c6 46.♗d2

Aware that the ending was hopeless, Franz Morsch resigned for Fritz. A probable continuation is 46...♔d7 47.f5 exf5 48.♗xh6 ♗xh6 49.exf5 ♔e7 50.♕xg4. White can advance the d and f pawns in turn, forcing the win. 'How to Beat your Chess Computer' by Van der Wiel! 1-0

Fritz still ended up 3rd. on 7/11, behind Van Wely, 1st with 8½, and Piket on 7½.

But it may never happen again as the Dutch Chess Federation has voted to ban computers from their Championship in future. FIDE is also instituting deterrents!

GAME OF THE MONTH

FROM GRAHAM WHITE

Here is another marvellous, mind-boggling effort from Graham, to get your teeth and favourite computer chess machine into!

Game of the Month

This was played in the recent "Advanced Chess" tournament in Leon - so-called because the players were allowed to call upon Fritz for computer assistance.

Shirov was to win the eventual final against Anand, but this is an earlier game and probably the most interesting one to analyse.

Anand - Polgar

[B42] Adv. Chess, 2000

1.e4 c5 2.♘f3 e6 3.d4 cxd4 4.♘xd4 a6

The line which is probably Polgar's favourite defence to 1.e4

5.♙d3 ♖b6 6.c3 ♘c6 7.♘xc6 ♖xc6 8.0-0 d6 9.c4

As well as gaining some space, White can now develop his knight naturally

9...♘f6 10.♗e2 ♙e7 11.♘c3 ♘d7 12.f4 0-0 13.♙e3 b6

A typical Sicilian structure has evolved, and White now uses his extra space to launch an extremely dangerous attack – first, a rook lift!

14.♖f3 ♙b7 15.♖h3 ♖fe8 16.♖f1 ♖ac8



17.♘d5

"A powerful attacking move" – Short. The game now resembles many of those Tal games of the late fifties and sixties, in which many top players were blown away by ferocious attacks. Indeed this move is



very reminiscent of the famous game between Tal and Larsen (Bled, 1965), considered to be one of the greatest of all time. Larsen could have survived the attack but, unlike Polgar, he did not have Fritz to help!

But which of the ChessBase engines would play ♘d5? After 5mins Junior6 plays ♘d1?! Hiarcs732 and Nimzo play ♗h5, though the latest experimental Hiarcs joins Fritz6 in choosing f5

17...♙d8!

Well played, Judit!

So what happens if the obvious 'automatic' 17...exd5?! is played? 18.exd5 ♗c7 19.♙xh7+ ♔f8 20.♙f5! White is winning now. 20...g6 21.♙xd7! ♗xd7 and 22.f5 is crushing – Hiarcs very quickly has it at +384;

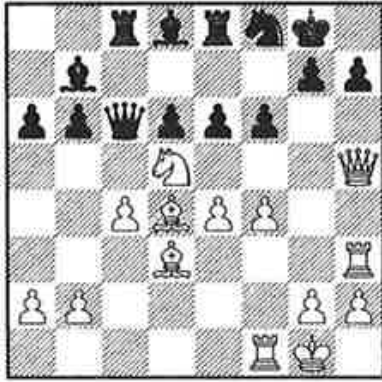
Nimzo strangely prefers the unexpected 17...♘c5? but this looks risky as the knight looks likely to be needed to defend from f8. Indeed Hiarcs soon produces 18.♗h5 with a +345 evaluation, expecting 18...h6 19.♙d4;

17...g6 is the Hiarcs choice, which certainly dulls White's attack for the present but leaves an obvious long-term weakness]

18.♗h5 ♘f8

Not 18...h6? 19.♙d4! exd5 (19...e5?! 20.♖g3!) 20.exd5 ♙f6 (20...♗c7 saves the queen but allows the deadly 21.♙xg7 winning easily) 21.dxc6 ♙xd4+ 22.♔h1 ♙xc6, leaving White a queen up for 2 minor pieces

19.♙d4 f6

**20.e5!**

Looks at first to be the best move to pursue the apparent advantage, but is it?

We must examine other tries, one a recommendation from Nigel Short, and the other which comes very positively from Hiarcs!

20. ♖ff3!? This is the Short proposal, which then goes 20...g6 21. ♖fg3 exd5

A) 22. ♖xg6+ is very possible 22...hxg6 23. ♖h8+ ♖f7 24. exd5 ♖e1+ 25. ♖f2 ♖e8 26. ♖h7+ ♖xh7 27. ♖xh7+ ♖f8 28. ♖xg6 (*).

Now either A1) 28...♖e2+?! 29. ♖f3 ♖e6 (or 29...♖xg6 30. ♖xg6 ♖e1 may be better) 30. ♖xb7 ♖e7 31. ♖xc8+-;

or best A2) 28...♖xg6 29. ♖xg6 ♖xc4 30. ♖h6+! is unclear, but looks to favour White;

B) The Short continuation is 22. exd5, and he leaves his analysis here. It is very complicated, but we can see some of the possibilities generated by the engines:

22...♖e1+ (22...♖d7? 23. ♖xg6!) 23. ♖f2 ♖e8 24. ♖xg6 (24. ♖xg6+!? may be better, then 24...hxg6 25. ♖h8+ ♖f7 26. ♖h7+ ♖xh7 27. ♖xh7+ ♖f8 28. ♖xg6 and we have actually transposed to the position above (*) where we concluded Black should play ♖xg6, but the position will favour White) 24...hxg6 (24...♖e2+ 25. ♖xe2 ♖xe2+ 26. ♖xe2 hxg6∞).

Now either B1) 25. ♖h8+ ♖f7 26. ♖h7+ ♖xh7 27. ♖xh7+ ♖f8 28. ♖xg6. And now we split into yet 3 more sub variations!

B1a) 28...♖xg6?! 29. ♖xg6;

B1b) 28...♖e2+ 29. ♖g3 ♖d3+ 30. ♖g4

B1b1) 30...♖e2+? 31. ♖h4! f5+ 32. ♖f6 (32. ♖h3 ♖d3+ 33. ♖g3 ♖xg3+ 34. ♖xg3 ♖e7+-) 32...♖g4+! 33. ♖xg4 ♖xf6+ 34. ♖h5 fxg4 35. ♖xb7+-;

B1b2) 30...♖xg6+;

B1c) 28...♖e2+!? apparently best 29. ♖g3 (29. ♖f1!? ♖e1+ Graham has this += (thus the !?) but I'm not sure... what do readers make of this, which I think is about equal!: 30. ♖f2 ♖e2+ 31. ♖g3 ♖d3+ 32. ♖g4 ♖xg6+! 33. ♖xg6 ♖xc4) 29...♖xg6+ 30. ♖xg6 ♖xc4 31. ♖xf6 ♖xf6 (or maybe 31...♖xd5?! 32. ♖g7+ ♖e7) 32. ♖xf6+ ♖e8 33. ♖g6+ ♖d8 34. ♖xd6+ ♖c8∞;

B2) 25.f5!? 25...♖e2+ (or 25...♖e2+) 26. ♖xe2 ♖xe2+ 27. ♖xe2 ♖xc4 28. fxg6 ♖xd5 (28...♖g7? 29. ♖e3 ♖e4 otherwise White has ♖h6+ 30. ♖d3 forcing 30...♖xe3+ 31. ♖xe3 ♖xg6 and now 32. ♖e8+-) 29.g7 ♖h7 30. ♖d3∞.

Eric's test version Hiarcs, which found 20.e5! in 30secs on his machine, produced 20. ♖xf6+! after just under 2mins. This find is critical: on our first run through it seems to be winning, so if any readers would like to apply themselves or their programs to the move, that would be good! Here are Black's apparent choices:

A) 20...gxf6? 21. ♖g3+ ♖g6 22. ♖xg6+! hxg6 23. ♖xg6+ ♖f8 24. ♖h6+ ♖f7 25. ♖h7+ ♖f8 26. ♖e2 e5 (26...♖c7 trying to protect f7 is not enough 27. ♖h8+ ♖f7 28. ♖h5+ ♖e7 29. ♖g7#) 27. ♖h8+ is m/7;

B) 20...♖xf6 21. ♖xf6

B1) Now best for Black seems to be 21...♖c7 22. ♖d4, but White is winning;

B2) Not, however, 21...gxf6? F6 has this as first choice and equal up to 20secs - which is why 20. ♖xf6 was a Hiarcs speciality only. But afterwards, when it sees 22. ♖g3+, it joins Hiarcs in an eval. of >200. 22...♖g6 23. ♖xg6+ ♖h8 (23...hxg6?? 24. ♖xg6+ ♖h8 25. ♖xf6+ ♖g8 26. ♖f3!) 24. ♖xf6 wins;

B3) Nor 21...♖c5+ 22. ♖xc5 dxc5 23. ♖c3 and White is in a winning position, a pawn up with positional advantages as well.

Can someone find an improvement for Black?

Step back now to our previous diagram, play 20.e5, and we're back with the game!

20...f5 21.exd6

21. ♖g3 switching the attack, is a possibility not mentioned by Short in his notes to the game. 21...dxe5 (21...♖g6? 22. ♖f6+! ♖xf6 23. exf6 ♖c7 24. fxg7 e5

25. ♖xf5!+-) 22. ♖xe5 ♘g6 is the best defence, though White still has an attack with either ♖xg6! or ♖h3

21... ♖d7 22. ♖g3

So White emerges at this stage having won a pawn with a clear advantage. The thing is that the game ends in a draw, so whilst we can admire the Polgar-Fritz remarkable defence for the rest of the game, we also want to see if Anand-Fritz could have improved, as you'd certainly expect White to win from here.

22... ♖g6 23. ♖h6

23. ♘f6+!? ♖xf6 24. ♖xf6 would give White a powerful dark-squared bishop, though Black wins back his pawn after 24... ♖xd6

23... ♖c6

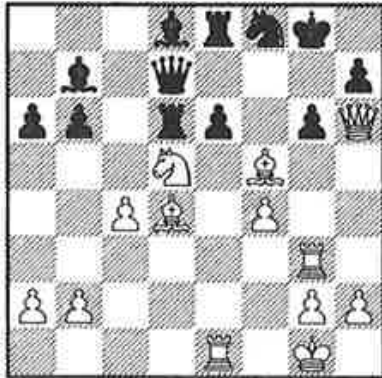
Not 23... exd5? and Anand will win Black's queen with 24. ♖xf5 ♖e6 25. ♖xe6+ ♘xe6 26. ♖xg6+ hxg6 27. ♖h8+ ♘f7 28. ♖h7+ ♘f8 29. ♖xd7;

However 23... b5!? might have been an alternative

24. ♖e1

24. ♘f6+ was available again, perhaps with more effect than in our previous note

24... ♖xd6 25. ♖xf5!



'Would you expect to survive this, even with cyber assistance?' asks Short in the Daily Telegraph! It's a fair question as White's heavy artillery absolutely surrounds the Black king.

25... ♖f7 26. ♖xg6! ♘xg6 27. f5 e5 28. ♖xe5

F6, J6 and Hiarcs all think 28. ♖xe5 is slightly stronger. Then 28... ♖xe5 (if 28... ♖f8? 29. h3 and White is secure and 'must' win) 29. ♖xe5, and now 29... ♖c6 30. ♖h5 looks to leave White with a big (winning?!) attack... as also in the game!

28... ♖xd5 29. cxd5 ♖xe5 30. ♖xe5 ♖f6!

31. ♖g5 ♖e7

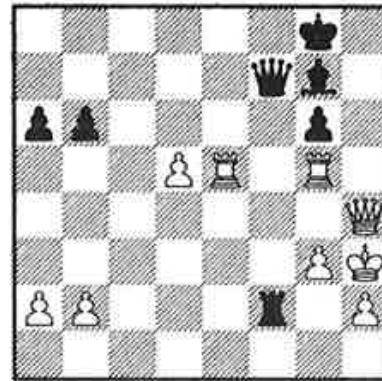
31... ♖c7 32. ♖e6 ♖f4 33. ♖xg6+ (33. ♖xf6 ♖e3+ 34. ♘h1 ♖xf6 35. ♖xg6+

♖xg6 36. ♖xe3 ♖xf5 is also strong) 33... hxg6 34. ♖xf4 ♖xf5 35. ♖c4 and White, with 2 extra pawns, still has a big advantage

32. g3

32. h3 might be better

32... ♖f8 33. ♖h4 ♖g7 34. fxg6 ♖f1+ 35. ♖g2 ♖f2+ 36. ♖h3 hxg6



White looks to be winning comfortably, but he must avoid a trap here!

Can you see it?

Give your program up to 3mins and find out what it would play and how it evaluates this, before you move on! We will unravel it for you, of course!

37. ♖e1

37. ♖e4! is very strong: 37... ♖xe5 38. ♖xe5 and surely White will get the full point!

The move which must be avoided is the attractive-looking 37. ♖e6? The nasty shock comes from 37... ♖xh2+! 38. ♘xh2 ♖f2+ 39. ♘h3 ♖f1+ 40. ♘g4 ♖d1+ 41. ♘f4 ♖c1+ with a perpetual.

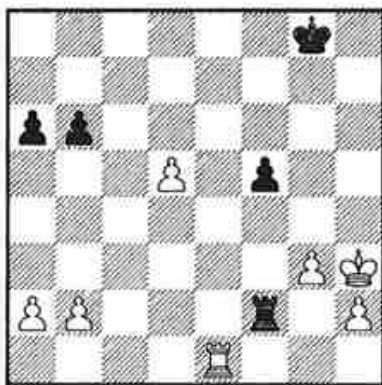
It's a devilish trap which, on an Athlon 500MHz, Hiarcs avoids in 25secs and Junior6 in 40secs. But Fritz and Nimzo, given 2mins, fall right into it!

Anand's avoidance of this trap may lend some credence to his own comment to Mark Uniacke whilst discussing the Hiarcs program's development that, whilst advertising for the event suggested that all the players would be using Fritz for their analytical help, he was actually using Hiarcs! If so, it's a pity for him that Hiarcs 732 couldn't find the very strong 20. ♘xf6+! which Eric's current test version produced.

37... ♖f6 38. ♖h6?!

38. ♖e6! ♘g7 39. ♖g4 ♖xg5 40. ♖xg5 also looks a certain win as, after 40... ♖f5+ 41. ♖xf5 ♖xf5 White has the more active rook!

38...♙xg5 39.♖xg5 ♗f5+ 40.♖xf5 gxf5



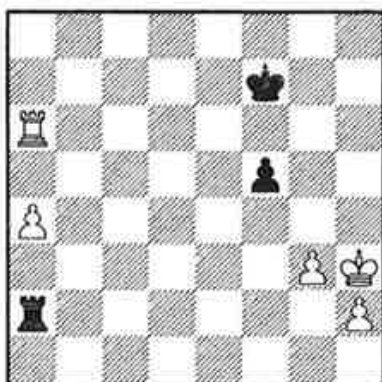
One now looks at Black's active rook to see that it starts to promise some decent drawing chances!

However our minor questioning of one or two of Anand's moves does not mean that his winning chances are now as good as gone – in fact we believe his probable main miss of the win is still to come.

41.♗e6 ♖xb2 42.d6 ♗d2 43.d7 ♖xd7 44.♖xb6 ♗d2!!

Passive defence would be hopeless, Polgar's play is just terrific and, in turn, it demands a constant major effort from her opponent!

45.♖xa6 ♔f7 46.a4 ♖a2



Two pawns down, Polgar is now relying on White's poorly placed king
47.a5 ♔e7! 48.♔h4?

After all our massive variations and the great chess, which we hope readers have enjoyed, THIS is the move which probably misses the win.

48.♖a8! seems to be right. Can anyone find a rebuttal, or is the win forced? Best seems to be 48...♔f7! but 49.a6! ♔g7 50.♔h4 ♖xh2+ 51.♔g5 ♖g2 (if 51...♖a2 52.♖a7+ wins) and 52.♖a7+ wins
48...♖xh2+ 49.♔g5 ♖g2 50.♔f4 ♖f2+ 51.♔e5 ♖f3 52.♖a7+ ♔d8 53.♖g7 ♔c8

54.♔d6 ♗d3+ 55.♔c6 ♖c3+ 56.♔b6 ♖b3+ 57.♔a7 ♔d8 58.a6 ♔c8 59.♖f7 ♖xg3 60.♖xf5 ♖b3

and a draw was agreed. ½-½

There are differing opinions on the validity of *Advanced Chess* - "The future of chess," Gary Kasparov; "An intrinsically worthless pursuit," Nigel Short.

But while such fine games are produced, it should have a healthy future!

Roy QUINN's in TEARS!

Roy wrote to me some while ago to say how much he was enjoying his latest **Hiarcs**.

A Hiarcs fan over quite some years, Roy helped us with some book preparation work during the Hiarcs4->5->6 upgrade after he'd found a couple of weak lines. But he admits that the current version running on his P/200 has him really struggling. I won't share the total score he confessed to me, but he sent the following from an 8 game Match at 40/2, which he lost by 6½-1½. "This one," he says, "almost had me weeping!"

Quinn, R - Hiarcs 7 P/200

[C96 Ruy Lopez Tchigorin. 40/2]

Notes: Part 1 by Roy except as stated

1.e4 e5 2.♘f3 ♘c6 3.♙b5 a6 4.♙a4 ♘f6 5.0-0 ♙e7 6.♗e1 b5 7.♙b3 d6 8.c3 0-0 9.h3 ♘a5 10.♙c2 c5 11.d4 ♙b7 12.d5 ♘c4 13.b3 ♘b6 14.a4 ♙c8

The end of the Hiarcs' book

15.♙e3 bxa4 16.bxa4 ♘c4 17.♙c1 ♙d7!?
NCO gives 17...♘a5 18.♖d3 ♘h5∞
18.♖d3 ♘a5 19.♘bd2 ♘h5 20.♘f1 f5 21.♖d1 fxe4 22.♙xe4 ♘f6 23.♙c2 ♖c7 24.♙g5 ♖fb8 25.♘g3 c4 26.♘e4 ♘b3 27.♖a3 ♖a5 28.♙xf6 gxf6 29.♘ed2 ♖c5



30. ♖d4

Note by Eric: Bold play by Roy! Hiarcs would expect 30. ♖xc4 ♜xc4 31. ♜xb3 ♜xb3 32. ♙xb3 ♜xc3= which keeps it simple and about equal. But Roy was looking for a combative game!

30... ♖xd4 31. cxd4 ♜xa3

Hiarcs played this after "a big think" of 42mins 53secs!

32. ♜e3

Readers should note that, apart from the clocks, I have all computer info and analysis turned to 'off' during games, so we are playing under tournament conditions (or as near to them as I can get!). So I don't actually know for certain why the computer had its "big think", but it's a sure sign that Hiarcs has found something it doesn't like! At this point, therefore, I'd started to think that maybe a draw by perpetual check could be mine!

32... ♜a2 33. ♙xh7+ ♔f8 34. ♜h5 ♜a1+ 35. ♙h2 ♜xd4 36. ♜g3 ♜xd5



37. ♜h6+

I was running short of time now, and my head started to swim. Proper calculation had become impossible, so I played the good ol' patzer's check!

37... ♜e8 38. ♜g8+ ♜xg8 39. ♙xg8 c3 40. ♖e4 c2 41. ♙d5 ♙xa4 42. ♙xa8 ♜xa8 43. ♜c1 d5 44. ♜a1 ♙d7 45. ♖g3 d4

I'd had all the stuffing knocked out of me by now, so I resigned. 0-1

After the game I started going back over the moves, to see what I might have missed. When I reached the position after 36... ♜xd5 (which is the diagram above) I found that the Hiarcs analysis gave 37. ♜h6+?? a big double question mark, and suggested something rather better:-

37. ♙e4!! ♜xe4

The ♙ must be taken, and the ♜ lost!

Here are the alternatives:

a. 37... ♜xd2 38. ♙g6 m/5;

b. 37... ♜d3 38. ♜xd3 f5 39. ♙d5 m/5;

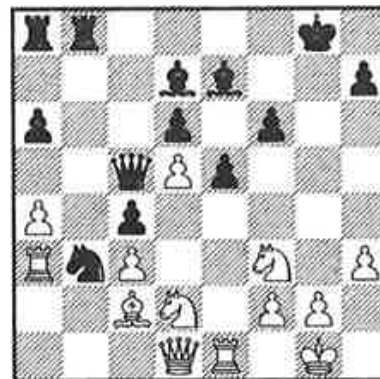
c. 37... ♜d4 38. ♙g6 m/5

38. ♖xe4

I was THAT close to my first win against the program... to say I was gutted would have been a gross understatement!

Notes: Part 2 by Eric

Back to our first diagram.



This missed conclusion to the game raises two questions:

[1] What should we put after 30. ♖d4... '?' or '!' or '!!' The programs all say '?' as their immediate view is that it's just losing material. But clearly that would be wrong.

[2] Question [1] can only be answered properly by finding out if Black had a saving defence!

30... ♖xd4

30... ♜xa3? is no good: 31. ♜h5! wins;

Here's my best try!: 30... ♖xd2!

If: A) 31. ♜h5 e4 (not 31... ♜xa3??)

32. ♜xh7+ ♔f8 33. ♙g6 m/3); or

B) 31. ♜a2 ♜xd5. Can White improve?

31. cxd4 ♜xa3

The big 42min think moment! However

all other moves are losing, e.g.

31... ♜xd5? 32. ♜g3+ ♔f8 33. ♙xh7

32. ♜e3 ♜a2

32... c3 33. ♖c4! (or 33. ♜g3+! ♔h8

34. ♖c4 ♜a2 35. ♙xh7 wins) 33... ♜a2

34. ♙xh7+ (again 34. ♜g3+ ♔h8 35. ♙xh7

wins) 34... ♔f8 35. ♜h5 ♜b1+ 36. ♙h2

♜a1 37. ♙xb1 and wins;

32... ♜b2 33. ♜g3+ ♔f8 34. ♜h5! wins.

33. ♙xh7+

... and I reckon the game is now a forced WIN for White with best play from both sides! **Reader comment/analysis welcome!**

READERS' LETTERS!

From Gary Preston

27 June 2000

Eric,

Well I am really enjoying my new purchases (baby permitting), and as light relief over the last couple of weeks (babies are so time consuming) I have been reading my back copies of NEWSHEET starting at around the end of 1989.

It is so nostalgic getting thrown back in time to the days when the purchase of a Portorose 68030 must have been the unattainable "Holy Grail" for many chess computer enthusiasts.

Many of us I suspect, had to engage in long and serious negotiations with our partners to be allowed to buy the 68020 version - I certainly did!

I remember coming to Countrywide and seeing the 68030 beast in its lair and drooling over it, just wishing I could somehow justify purchasing it.

I also recall speaking to someone at the time (I think it may have been Bob Clarke) who said they had bought one. I asked how he managed to get that past his partner and he said "oh they don't know!!" Still I suppose one chess computer looks very much like another to our better halves! I wonder what we would have been prepared to pay in those days for what's available on a desktop/laptop now?

Anyway the real reason for my mail is just incidental, but nevertheless interesting.

Back in 1992 (the August/September edition) you wrote an article on when a computer could possibly achieve a grading of 2800. At the time you calculated the increase of the average

rating of the top 10, 25 and 50 computers over a year period for a comparison.

You used the top 25 as the basis and estimated that 2800 would be achieved some time in 2001. I think the average annual increase for the top 25 then was about 46 Elo.

Interestingly, the average increase for the top 10 was I think 39.6 Elo which I believe would mean achieving 2800 around mid 2002 - which is not very far off I imagine. Well done!

Regards,

Gary



Thanks, Gary. I smiled to myself when I read your last sentence, as it's not clear from a literal standpoint whether you mean you imagine the 2800 Elo is not far off, or the year 2002! I'm sure you're right about the latter, but think perhaps that your congratulatory 'well done' may still be a bit premature as far as the 2800 Elo goes!

New Statistics

The top program in *Selective Search* issue 88 (Fritz6 P/233) was rated 2640, though results in since have caused the whole list to drop a little. At one time speed doubling was classed as worth 80 Elo, but this figure is now widely considered to be about 60 Elo for current hardware power.

At 60 Elo per doubling, the 2800 figure should have just arrived:-

From	To	Equiv	Increase
P/233	P/450	2 x SelSearch	60 Elo
P/233	P/1000	dual Fritz	120 Elo
P/233	P/2000	quad Fritz	180 Elo
P/233	P/4000	8x Fritz	240 Elo

Thus Fritz6 on its Dutch Championship quad 500MHz processors should have played at perhaps 2820 Elo... but it didn't!

However, for the benefit of any readers who haven't seen this discussion before, the value of doubling reduces the faster the processors get, as they take us further and further away from the root position.

When searches were getting us to the heady heights of 4 or 5 ply after 3mins, a triple speed doubling (2^3) would be sufficient to advance the search an extra ply, which at the 4-5-6 ply area was worth 200-250 Elo (the equivalent of 80 Elo for a single doubling).

Now that even the knowledge programs like, say, Hiarc or Rebel Century (before the knowledge-removement upgrade) get to 9 or 10 ply in many 3min searches, the value of getting an extra ply is much less. I.e. to extend the search in 3mins from 5 ply to 6 ply might have been worth 200-250 Elo, but to extend it from 9 ply to 10 ply cannot possibly be worth anything like as much.

Readers can easily prove for themselves that the number of changes (improved moves) a dedicated computer or PC program makes from the start of calculations through to 6 ply is much greater than the number of move changes that are made from ply 7 onwards. The deeper the search goes, programs often start to slow down going through the plies, and there are less and less move changes made. Thus we must say that the beneficial effect of speed improvement reduces all the time.

Results prove the Theory

In fact the games and results of Fritz6 in the **Dutch Championship** and the recent **GM Challenge** at Frankfurt indicate to me that improving speed alone will never get the programs to 2800! This is because speed does not solve inherent problems in the programs which only the programmers can solve: statics a la Bill Reid, blocked pawn centres, pieces on the wrong part of the board and still some king safety issues!

- Although FRITZ is heavily used in this discussion, I am absolutely NOT implying that this is a 'Fritz problem' - it applies to ALL programs. However Fritz is in the spotlight because, at present, it is the only one to have appeared in serious MAJOR TOURNAMENTS on such high-powered equipment, giving us an opportunity and reason to re-assess these questions.

The best example on the chess front is the

subject of another article by Bill Reid in this issue. He has proven with many examples that statically trapped pieces are wrongly evaluated by all the programs, and this false evaluation will operate over the period of many, many moves as the program is convinced it is *'bound to free that trapped rook'*... sometime!

Its lack of concern for the trapped piece probably caused it to get into the mess in first place, when it no doubt won a pawn or something for this *'small temporary (it hoped!) handicap'*, and subsequent strategically incorrect moves will be made, concentrating on other, periferral matters instead of taking vital action to free the ensnared piece.

And speed does not and will not solve this fault - they don't search deep enough to see the resolving of the matter if you leave them on all day and all night... and at present they never will!

If this is something which is sufficient to rob the program of, say, 20 Elo points over many games, and persistent speed doubling is not touching this figure at all, then true progress towards 2800 Elo is not being made to the degree that pure mathematical issues alone will suggest.

At the moment I would suggest that speed doubling (against humans) gives no more (and maybe less) than 40 Elo when working at the P/450 level.

When you look at the Fritz6 figures, you could even argue that this is too high!

Dutch Champs

Fritz6 on Quad processor

2635 from 10 games (the 2 forfeited games excluded)

Deductions:

- time control $40/2 = 0$
- speed doubling factor 2 (2^2) = 80
- true P/233 rating performance = 2555

Frankfurt GM Challenge

Fritz6 on 8x processors!

2750 from 10 games

Deductions:

- time control $G/25 = 80$
- speed doubling factor 3 (2^3) = 120
- true P/233 rating performance = 2550

These **true P/233 rating performance** figures are very similar (though a total of 20 games is still small sample! The conclusion

has to be that either:

- the *Selective Search* ratings at the P/233 level are too high
- The Speed Doubling figure of 40 Elo is too high

... or it's a bit of both! The loss of the great Aegon Tournament, which gave us an annual check on computer progress, and the lack of other real opportunities to get computer v human gradings could well mean that the *Selective Search* Rating List has not received its full annual adjustment recently - an adjustment which was almost always in a downwards direction, as players have become more and more computer aware.

Either way we must admit that the apparently very high 2750 Elo figure at G/25 using 8x processors is still some way short of 2800 at 40/2, especially were the program to use a more typical P3/550 say, which you and I might be using.

I should add that these particular '*inherent issue*' problems (statics, blocked positions etc.) only really hurt the programs against **humans**, as the problems appear, to a greater or lesser degree, in all of the programs. So hardware speed increases are still moderately effective in computer-computer games.

Software Progress

For the record, the top 10 P/233 programs in the *Selective Search* rating list over the past 12 months have increased from an average of **2588** twelve months ago to **2600** as I write on 30/June 2000.... just **12 Elo** for software improvement.

I will try to do some more exact work on the impact of hardware and speed issues for a future issue, but as a temporary measure I would suggest we reduce the expected future effect of each successive speed doubling by 10 Elo. So if we start by saying that doubling P/233 is worth 50 Elo, then doubling P/450 is worth 40 Elo etc. Here's a TABLE which will cover us through to an 8x 500MHz processor set-up:

From	To	Equivalent	Increase
P/233	P/450	2 x <i>SelSrch</i>	50 Elo
P/233	P/1000	dual Fritz	90 Elo
P/233	P/2000	quad Fritz	120 Elo
P/233	P/4000	8x Fritz	140 Elo

I know that readers could easily argue that even this fairly drastic reduction in our optimism is too much in the light of the results. But perhaps it hits the right balance between the value of increased speed against other computers compared with the lesser effect against humans.

Let's see what **Junior6** does at Dortmund, and whether it produces a '*lower than expected performance*' in the way Fritz has done - but letters on this subject are welcome in the meantime.



From Ray Rogers

26/June 2000

Dear Eric,

Just a few lines to let you know I'm still here and as interested as I ever was in your work and *Selective Search*.

Many thanks for *SS/88*, of great interest to me as I am particularly keen to read about the programmers and their work.

As I may have said before I'm really a *ChessBase* user as I have *Hiarcs732* or *Fritz4* running most days.

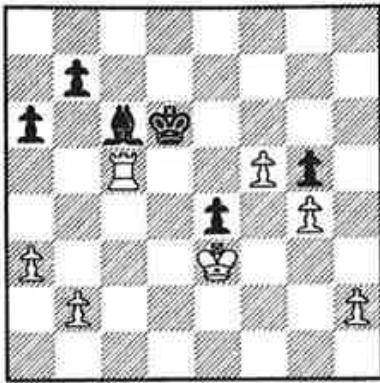
I wouldn't rule out *Rebel-Tiger* at some stage if it were to give me a similar printout and analysis as *Hiarcs*.

I do like the *Rebel* style of play (most of the time) as it does seem to play with a human feel. For an alternative point of view I use *Rebel7* if I think *Hiarcs* hasn't seen something I think it should have.

Look at this example, diagram next page, with White to play.

Nothing too remarkable here. I was surprised though when one of our club players, Geoff (129 BCF, but used to be 150+) played 1.♔d4 here. Had he played 1.♞xc6+ I think his opponent (about 100

BCF) would have resigned. As it was, White won... but about 12 moves later.



Hiarcs seemed quite happy with $1.\text{♔d4}$, and $1.\text{♞xc6+}$ was not in its top six choices?!

When I tried **Rebel17** (I have a P/133 by the way) it went straight to $1.\text{♞xc6+}$ and stayed put!

I think my **Genius5** also changed to $1.\text{♞xc6+}$ but only after a few minutes.

I decided to try this on the Mephisto **RISC 1MB** which went to $1.\text{♞xc6+}$ in a couple of seconds!

However the **Mephisto Academy** didn't like it even after several minutes, so there was a program improvement between the Academy and the RISC.

Well done Rebel and RISC, in my view. Here is the recommended line of play:

$1.\text{♞xc6+}!$

$1.\text{♔d4}$ was the club player's choice as well as that of Hiarcs. Hiarcs expected $1...\text{♕e7}$ $2.\text{♞xc6 bxc6}$ $3.\text{♕xe4}$, but Black could have gone $1...\text{♞a4}$ and the quickly winning rook for bishop exchange is no longer available.

$1...\text{♕xc6}$ $2.\text{♕xe4}$ ♔d6 $3.\text{♔d4}$

enters into John Nunn's reciprocal zugzwang type territory! 1-0

As I mention dedicated machinery here, I'll tell you that I no longer have the RISC 1MB. I sold it to a friend who used an up-graded Conchess for some years, but now has my old Kasparov RISC 2500 and the 1MB.

I found a Tasc R30-1995 version second hand (64 led) and have to say that it is superb. It didn't choose $2.\text{♞xc6}$ by the way, but it's impressive in all respects, sometime coming up with better moves than the PC programs.

This brings me to "How are different Selective Search readers using their chess computers?" I use my PC with Hiarcs to analyse games played locally and in particular at Margate Chess Club.

I do not play against it, and I don't play postal chess or as yet have internet access. I practice openings etc. against the R30 and play 15 or 30 minute games if I feel the need to sharpen my reflexes. I had the odd draw with RISC 1MB, but 'nil points' so far against the R30. I hope to have time to play it at tournament time controls one day.

I hope that the new Novags appear as reported, as I may be interested should I go on holiday again next year. I always take a portable with me.

I hope you've fully recovered now Eric. If you're like me, you tend to think of yourself as indestructible - or something like it, anyway. I try to ignore illness hoping that it will cure itself, and of course that is usually the way. We don't have the time to be ill, do we?!

My very best wishes to you and your family.

Ray



Thanks Ray. To make sure no-one is left confused, the RISC 1MB and Academy which Ray refers to were the Mephisto dedicated machine of a few years ago by Ed Schroder, whose PC series of programs are Gideon, Rebel 7, 8, 9, 10, Rebel Century and Decade. The other program Ray mentions is Rebel Tiger which is, in fact, programmed by Christophe Theron of France, but produced by the same Rebel company.

FRITZ AND THE GM CHALLENGE!

The Frankfurt Chess Classic matched 5 of the 6 competing GM's (Kasparov refused to play) against Fritz on the Primergy N800 (8 x 700MHz processors!). The time control was G/25mins.

The first 3 games were fairly quiet draws, though Fritz showed some good endgame defence against Kramnik!

Kramnik, V - Fritz N800

Frankfurt (1, 1). A10: English Opening, Unusual

1.c4 f5 2.♖f3 ♖f6 3.g3 g6
4.b4 ♗g7 5.♗b2 d6 6.d4 c6
7.♗g2 d5 8.♖bd2 dxc4
9.♖xc4 ♗e6 10.♖c2 ♗d5
11.0-0 ♗e4 12.♖b3 ♖d5
13.♖fc1 ♖bd7 14.♖a5 ♗b8
15.a4 ♗h6 16.♖f1 g5 17.b5
g4 18.♖e1 ♗d2 19.♖xd5
♗xd5 20.♗xd5 ♖xd5 21.♖c4
♗xe1 22.♖fxe1 h5 23.e4 fxe4
24.♖xe4 ♗h7 25.♖ae1 cxb5
26.axb5 ♖7f6 27.♖4e2 ♖c7
28.b6 axb6 29.♖xb6 ♖d7
30.♖c4 b5 31.♖e3 ♖f6
32.♖d1 ♖d8 33.♖c1 e6!
34.♖c5 b4 35.♖g2 ♖d6 36.h3
♖cd5! 37.♖c4 gxh3+
38.♖xh3 ♖a6 39.♗c1 ♖b7
40.♗f4 ♖xf4+ 41.gxf4 ♖d7
42.f5 ♖xd4 43.♖xe6+ ♖xe6
44.fxe6 ♖e4 45.♖c6 ♖xf2+
46.♖g2 ♖e4 47.♖e3 ♖d6
48.♖b6 ♖d3 49.♖f2 b3
50.♖b8+ ♖e7 51.♖e2 ♖d4
52.♖xb3 ♖xe6 53.♖d3 ½-½

Fritz N800 - Morozevich, A

Frankfurt (1, 2). C01: French, Exchange Variation

1.e4 e6 2.d4 d5 3.exd5 exd5
4.♖f3 ♗d6 5.c4 dxc4 6.♗xc4
♖f6 7.0-0 0-0 8.♖c3 ♖c6
9.h3 h6 10.♖e1 ♗f5 11.d5
♖e7 12.♗e3N a6 13.♗d4
♖g6 14.a4 ♖e8 15.♖b3 b6
16.♖xe8+ ♖xe8 17.♖e1 ♖f6
18.♖h1 ♖h7 19.♖e4 ♗xe4
20.♖xe4 ♖g5 21.♖e1 ♖xf3
22.♖xf3 ♖d7 23.b3 ♖e8
24.♖xe8+ ♖xe8 25.g3 a5

26.♖g2 ♖e7 27.♖f5 ♗e5
28.♗e3 ♗d6 29.♗d3 ♖e5
30.♖xe5 ♖xe5 31.♗f5 g6
32.f4 ♖c4 33.bxc4 gxf5
34.♗d4 ♖h7 35.♖f3 ♖g6
36.♗e5 f6 37.♗xd6 cxd6
38.♖e3 h5 39.♖d4 ♖f7
40.♖c3 ♖e7 41.♖d3 ♖f7
42.♖e2 ♖g7 43.♖e1 ♖f7
44.♖f2 ♖g7 45.♖e2 ♖f7
½-½

Leko achieved his draw easily playing the Scotch, and promised, "Tomorrow with White I play to win, and show what chess is all about."

Fritz N800 - Leko, P

Frankfurt (1, 3). C47: Scotch

1.e4 e5 2.♖f3 ♖c6 3.♖c3
♖f6 4.d4 exd4 5.♖xd4 ♗b4
6.♖xc6 bxc6 7.♗d3 d5
8.exd5 cxd5 9.0-0 0-0
10.♗g5 c6 11.♖f3 ♗d6
12.♖fe1 ♖b8 13.♖a4 ♖b4
14.b3 ♖g4 15.♗xf6 ♖xf6
16.♖xf6 gxf6 17.♖ad1 ♖g5
18.f3 ♖e5 19.g3 ♖fe8 20.♖f2
h5 21.f4 ♖xe1 22.♖xe1 ♖xe1
23.♖xe1 h4 24.♖f2 ♗g4
25.♖e3 hxg3 26.hxg3 c5
27.c4 dxc4 28.♗xc4 ♗d7
29.♖c3 ♖g7 30.♖d3 ♗f5+
31.♖e4 ♗c7 32.♗d5 ♗a5
33.♖e3 ♗xe4 34.♗xe4 ♗e1
35.g4 ♖f8 36.♗d3 ♖e7
37.♗a6 ½-½

Anand, V - Fritz N800

Frankfurt (1, 4). A81: Dutch

1.d4 f5 2.g3 ♖f6 3.♗g2 g6
4.c3 ♗g7 5.♖b3 ♖c6 6.♖f3
d6N A Fritz novelty? Certainly
6...e6 is the standard move here
7.0-0 e5 8.d5 ♖e7 9.c4 0-0
10.♖d1 ♖e4 11.♖c3 ♖xc3
12.♖xc3 a5 13.♖c2 a4
14.♖b1 f4 15.♖g5 15.gxf4
exf4 wouldn't make much
difference, Black has obtained
some initiative either way
15...♖f5 16.♖e4 ♖d4
17.♖d3 ♗g4 18.f3 ♗d7
19.b3 axb3 20.axb3 ♖a2! Fritz

applies the pressure, reputations mean nothing! 21.♗b2 ♗f5



22.♗xd4?! Maintaining the tension with 22.b4 looks better 22...exd4 23.g4 ♗xe4 24.fxe4 ♖g5 25.♖a1?! Although this loses a pawn, Anand clearly hopes that getting a rook onto the 7th will give him major compensation 25...♖xa1 26.♖xa1 ♖xg4 27.♖a7 ♖h4 28.♖a1?! White's plan with 25.♖a1 is in tatters. The question then is: 'Could Anand have played 28.♖xb7?' If he had, Black's best is 28...♖a8! 29.e5 (29.♗f1 ♖g4+ 30.♖h1 ♖a1+) 29...f3! 30.♖xf3 forced. (30.exf3? ♖a2 is deadly!) 30...♗xe5+ and White is overwhelmed 28...♗e5 29.h3 ♖g3 30.♖xg3 Anand probably saw a sudden ray of hope in being offered the chance to exchange queens - after all, there's still only a pawn in it 30...fxg3 31.♖f1 ♖a8 Fritz isn't interested in being left with an opposite coloured bishops ending! 32.♖f3 ♖a1+ 33.♗f1 ♖g7 34.♖g2



34...h5! 35.h4 ♖a2 36.♗h3 c6 37.dxc6 bxc6 38.♔g2 c5 39.♗h3 ♗h6 40.♗d3 g5 41.hxg5+ ♗xg5 42.♗f3 ♗f4 43.♗d3 ♖a1 44.♗f3 ♖e1 After 45.♗g2 it's ♖xe2+, so Anand resigned 0-1

Thus Fritz ends day 1 with a 2½-1½ lead! Day 2 proved a bit tougher!

Fritz N800 - Kramnik, V

Frankfurt (2, 5). A27: English Opening, Three Knights Var. 1.c4 e5 2.♗c3 ♗c6 3.♗f3 f5 4.d4 e4 5.♗g5 ♗b4 6.♗h3 ♗f6 7.e3 ♗xc3+ 8.bxc3 d6 9.♗f4 0-0 10.h4 ♖e7N 11.c5! Aiming to get his bishop onto the a2-g8 diagonal, which is the recognised way to cause Black trouble 11...♗d8 12.♖b3+ ♗e6 13.♗c4! ♖e8 14.♗a3 ♗h8 15.♗xe6 ♗xe6 16.♖xb7



Fritz has won a pawn, and it's not a doubtful 'smash and grab' act, the computer definitely has a good position, so it is interesting to see Kramnik's efforts to survive! 16...d5 17.♖b1 There was a second pawn on offer here with 17.♗xe6 but 17...♖xe6 18.♖xc7 ♖ac8 followed by perhaps f4 and ♖g4 looks dangerous for White 17...♗f7 18.♖b3 ♖ec8 19.c6 This looks dangerous for Black - but it's not always a good thing to push one's pawn beyond other pawn protection, even though it's something computers often do quite willingly 19...♖d8 20.♖a6 ♗h5 21.♗xh5 ♗xh5 22.♖b7 ♖f6



Instead of 22...♗e8 Kramnik has boldly allowed Fritz the chance to win another pawn with ♖xa7 23.0-0? Ignoring the pawn is one thing... but this is altogether another. Such disregard for king safety when he has 2 major pieces on a6 and b7 is something no GM would even consider. If 23.♖xa7 ♖ab8 24.♗b4 ♖g6 both sides have chances 23...h6! It is assumed by most commentators that Kramnik pretty much guessed what Fritz's next manouver (another pawn grab) would be 24.♗c5 ♗h7 25.♗xa7 ♖xh4 Of course, and now White is pretty well doomed. I learned something whilst considering the outcome of this game, and that is that when you have opposite coloured bishops on the board and an attack (!), the number of pawns is of little or no importance. If a player has the attack with his unique bishop, he should win 26.♖fb1 ♗f3! A quietly remarkable move, especially considering the nice things I've just said about this piece! For a moment computer evaluations jump like a human heart! 27.♖f1 The computer programs all appear to think they've escaped with this! If 27.gxf3 exf3 28.♖d3 (pretty well anything else meets ♖c8-e8-e6) 28...♖f8! 27...♖e8! 28.♗b8 ♖axb8! Another shock! 29.♖xb8 Anything else loses yet more dramatically. E.g. 29.gxf3 exf3 30.♖d1 ♖xb7 31.♖xb7 ♖h3 & mate is unavoidable!

29...♖e6 Threatens ♖g6 and mate not far behind 30.♖f8 ♖g6 Threatens ♖h3 and, if 31.♖bb8, ♖g5 and the inevitable ♖h5 31.♖xf5 ♖xg2+ 32.♖xg2 ♗xg2 After 33.♗xg2 ♖g4+ 34.♗f1 ♖xf5 it's 0-1

Fritz N800 - Anand, V

Frankfurt (2, 6). C42: Petroff 1.e4 e5 2.♗f3 ♗f6 3.♗xe5 d6 4.♗f3 ♗xe4 5.d4 d5 6.♗d3 ♗d6 7.0-0 0-0 8.c4 c6 9.cxd5 cxd5 10.♗c3 ♖e8 11.♗xe4 dxe4 12.♗g5 ♗f5 13.♖e1 ♗c6 14.d5 ♗b4 15.♗gxe4 ♗xe4 16.♗xe4 ♗xd5 17.♗g5 ♗e7 18.♖h5 g6 19.♗xe7 gxh5 20.♗xd8 ♖axd8 21.♗f1 ♗g7 22.♖ad1 b6 23.♖d4 ♗f6 24.♗d6 ♖xe1+ 25.♗xe1 ♗g6 26.h3 ♗e4 27.♖xe4 ♖xd6 28.a4 a5 29.♗e2 ♖d5 ½-½

Morozevich, A - Fritz N800

Frankfurt (2, 7). D00: 1 d4 d5: Unusual lines 1.d4 d5 2.♗f4 ♗f6 3.e3 c5 4.c3 e6 5.♗d2 ♗c6 6.♗d3 ♖b6N Here Black usually develops the f8/♗ to e7 or d6 7.♖b1 ♗d7 8.♗gf3 f6 9.♗g3 ♗e7 10.0-0 f5 11.c4 cxd4 12.cxd5 exd5 13.♗xd4 ♗xd4 14.exd4 f4?! For this tournament Fritz seems to be developing a habit of castling when it shouldn't, and not castling when perhaps it should! 15.♗h4 Not 15.♗xf4? ♖xd4 despite the tempting 16.♖h5+ g6 17.♗xg6+ 15...♗xh4 16.♖h5+ ♗d8 17.♖xh4+



Morozevich has a useful advantage with Fritz's run-

around king and 2 weak pawns to White's 1! 17...♟f6 18.♟h5 ♖b6 19.♗f3 g6 20.♟h6 Trying to maintain an attack, but this looks a very dubious square for the queen 20...♗d7 21.♗e5 ♜c8 22.♟bc1 ♟xc1 23.♟xc1 ♗e6 24.h3 ♗c8



25.♟e1 This move on its own is okay, except that it starts a doubtful manouvre in which the e5/♗ is withdrawn so that this rook can take its place 25...♗e7 26.♗f3?! ♗d7 27.♟e5?! ♗c6 28.♟e2? 28.♟h5 would have made some sense of White's last 3 moves, and after 28...♗xd4 29.♗xd4 ♟xd4 30.♗xg6 retain some initiative 28...♗c8 29.♗b5? Morozevich is still on the attack, but he probably needed to offer the queen exchange with 29.♟g5 ♟xg5 30.♗xg5 and after 30...♗xd4, 31.♟d2 seeking the draw 29...♗xd4 30.♗xd7+ ♗xd7 31.♗xd4 ♟xd4 32.♗h2 ♟f6 33.♟d2 d4 Mmmm. This pawn looks distinctly nasty! 34.♟d3 ♗c8 35.♟b3 ♟e5 36.a4 ♗b8 37.♟f3 a6 38.h4 ♗a7 39.a5 ♟d8! 40.♟xh7?? Pressured into trying to free the queen after her long imprisonment, this was a terrible move. The game was lost in any case as, if 40.♟d3 then 40...f3+! 40...d3! 0-1

Leko,P – Fritz N800

Frankfurt (2, 8). A04: Unusual lines, King's Indian Attack
1.e4 c5 2.♗f3 e6 3.d3 ♗c6
4.g3 g6 5.♗g2 ♗g7 6.0-0
♗ge7 7.♟e1 d6 8.c3 e5 9.a3

0-0 10.b4 h6 11.♗bd2 ♗e6
12.♗c4 b5 13.♗e3 a5
14.bxc5 dxc5 15.c4 Leko is trying to close the position as much as possible – remember he promised before the game to show us exactly how it's all done! 15...b4 16.♗d5 ♟d6 17.♗b2 ♟fb8 18.a4 ♗g4 19.h3 ♗e6 20.♗d2 ♗d4 21.♗xd4



21...cxd4 Couldn't be avoided, even though White has a passed pawn for later. Not 21...exd4? 22.e5! clearing g2-a8 22...♟d7 23.♗xe7+ ♟xe7 24.♗xa8 ♟xa8 25.h4± 22.♗b3 ♟a7 23.♟d2 ♗h7 Fritz's moves are becoming aimless – just as Leko forecast as its response to this type of play 24.♟e2 ♗c8 25.f4 Nimzovich always said "attack the chain at its base" – modern theory says this isn't the only way, but it's still often the best! 25...♟c6 26.f5 But Leko is doing something else anyway! 26...gxf5 27.exf5 ♗xd5 28.♗xd5 The bishop looks very healthy here! 28...♟f6 29.♟f2 ♗f8 30.♗g2 ♗b6 31.♗e4 The opposite coloured bishop is too valuable to exchange – as noted in an earlier game it is again an advantage for the side that takes or has the initiative, at least whilst there is sufficient material on the board 31...♗d7 32.♟e1 ♗c5 33.♟a2 ♗g8 34.♟f3 ♗d6 35.h4 ♟c7 A little trap here by Fritz! 36.♗h3 Not 36.♗xa5? b3! 37.♟b1 ♗xa4+ 36...♗h7 37.♗xc5 ♗xc5



38.g4! Going for it! 38...b3 Is the pawn dangerous? 39.♟g2! ♗h8 40.g5 ♟d6 41.♟g4 ♟d7 42.♟h5 ♗f8 43.♟g3 ♟d6?? Other programs suggest 43...♟e8 or 43...♟b6, which are better than Fritz's choice. But White still plays 44.♟eg1 and is well ahead 44.♟eg1! b2 45.c5! ♟xc5 46.gxh6 ♗xh6 47.♟g6!! ♟xg6 48.fxg6 ♗g7 49.gxf7+ 49...♗f8 50.♟g8+ ♗e7 51.♟e8+ ♗d6 52.♟xh6+ m/4 1-0

Programmer Franz Morsch was interviewed during this game. Snippets: "I am full time on working at Fritz... about 40 hours a week, much of it is research and trying things out.

Fritz is the ChessBase main engine, the sales of the others are lower, everybody buys Fritz... Vishy is a Hiarcs fan, but only a few buy the others (?)... you cannot make an income from those kind of sales of the other engines... my advice to future chess programmers is 'don't give up your job!' (laughs!).

Today humans play very cautiously... they try to close up the position, they are very careful and show a lot of respect for Fritz. In the Frankfurt Masters (1999) most players used their normal style – lots of Sicilians came up, and Fritz did really well. Now we see that it has weaknesses if you close up the position, all the pawns get fixed... we have to work hard

there, it is much more difficult. We have lots of knowledge in the program, but chess is so complicated and there is so much happening. There is a lot of coding to safeguard the king, but it did not work in the Kramnik game, it saw the attack much too late."

We join the next game at move 30 - I apologise for the incorrect move numbering.

Shirov, A - Fritz N800

Frankfurt (3, 9)



All programs expect 1.♙c2 to defend b3 from a knight fork 1.♙f5! ♙xf5 Program evaluations leap cheerfully! 2.♗xf5 You know Fritz will dive in for the ♗-♗ exchange. The trouble is, it takes up time, whilst Shirov heightens his attack against Fritz's king! 2...♗b3 3.♗g4 g6 4.♗h6+ ♗g7 5.♗f4 ♗d8 6.♗g4 bxa3 7.bxa3 ♗xa1 8.♗xa1 ♗a6 9.♗d1 ♗b3 Now Fritz is after a pawn - you can see an added attraction: its own a-♗ will become very strong given the chance 10.♗c1 g5 It saw 10...♗xa3?! 11.e6! (clearing for ♗d4) 11...♗xe6 12.♗d4+ f6 13.♗c7+ ♗g8 14.♗h6+ ♗h8 15.♗f7+ ♗g8 16.♗xd8=. As Fritz believes it's ahead (the material), it still plays for the full point 11.♗f5 ♗xa3 The passed pawn on a4 certainly looks dangerous 12.♗c8 h5 13.♗xd8! Shirov eliminates the vital defender of f6 and g5 13...♗xd8 14.♗f6! ♗a1+ 15.♗h2 The Fritz eval. now acknowledges Shirov's attack

15...♗c3 16.♗xg5! Better than 16.♗xg5+ ♗f8 17.e6 ♗xe6 18.♗h7+ ♗e8 19.♗g8+ ♗e7 20.♗g5+ ♗f6 21.♗g7 ♗dd6 and White may only have a draw?! 16...♗f8 17.f4 h4 18.♗xh4 ♗a5 Desperately trying to get back into the game before it's too late 19.♗h7! With the dangerous and clever idea ♗e4! 19...♗e7 E.g. if 19...♗da8 20.♗e4! does the job! 20...♗e8 21.e6 ♗xe6 22.♗g8+ ♗d7 23.♗xf7+ ♗c8 24.♗xe6+ ♗b8 25.♗e8+ ♗c7 26.♗e7+ ♗c6 27.♗d6+ ♗b7 28.♗d7+ ♗a6 (28...♗b8 29.♗d6 m/7) 29.♗c6+ etc 20.♗g4+ ♗e8 21.♗g8+ ♗d7 22.♗xf7+ Not the greedy 22.♗xd8+?? ♗xd8 23.♗xd8 ♗xd8 24.♗e3 d4! and a Black pawn queens! But 22.♗xd8?! ♗xd8 23.♗xf7+ ♗c6 24.e6 still wins 22...♗c6 23.e6 ♗da8 24.e7 ♗c5 25.♗f2+ ♗c4 26.e8♗ ♗xe8 27.♗xe8 Black should resign, but Shirov is low on time and his hands were visibly trembling with anxiety making his final moves. "One tiny mistake in time trouble can still cost me the point against a computer" he told spectators 27...♗b3 28.♗e2 ♗c6 29.♗d1+ ♗c2 30.♗e3 ♗d2 31.♗xc2+ ♗xc2 32.♗xc2 ♗xc2 33.f5 a3 34.f6 a2 35.♗d4 After 35...♗d3 36.♗a1 wins 1-0

Fritz N800 - Shirov

Frankfurt (3,10). C01: French, Exchange Variation 1.e4 e6 2.d4 d5 3.exd5 It's a surprise that Fritz plays the 'harmless' exchange variation in its special tournament book 3...exd5 4.♗f3 ♗f6 5.♗d3 ♗d6 6.0-0 An advantage of the French for Fritz is that the ♗ gets safe! 6...0-0 7.♗g5 ♗g4 8.♗bd2 ♗bd7 9.c4 c6 10.c5?! The computer blocks the centre?! 10.h3 is usual 10...♗c7

11.♗c2 h6 12.♗h4 g5 12...♗e8 is usual here 13.♗g3 ♗h5 14.♗xc7 ♗xc7 15.♗fe1 ♗fe8 16.♗h7+ ♗g7 17.h3 ♗e6 18.♗d3 ♗f4 19.♗e3 f6 20.♗ae1 ♗f7 21.♗f5 ♗f8 22.a3



Shirov is content: a draw will give him a personal 1½-½ win over the computer, and the GM team also a narrow 5½-4½ victory 22...♗xe3?! 23.fxe3! Shirov says he expected 23.♗xe3, but the recapture with the pawn is considered in retrospect to be strong and strategically best! 23...♗h5 24.e4! ♗e8 25.e5 ♗e6 26.b4 ♗hf4 27.g3 ♗g6 28.♗b3 fxe5?! White tries to free his cramped position, but the passed e-♗ quickly leads to threats 29.dxe5 ♗ef8 30.♗c3 ♗g8 31.♗e3 ♗e6 32.♗bd4



White's pieces are getting into beautiful positions 32...♗f7 33.♗d3 ♗e7 34.g4 ♗eg6? Facing difficult problems Shirov blunders the exchange. 34...♗h8!? might have been best, or move the rook with 34...♗b8 35.♗xe6 ♗xe6 36.♗xe6 ♗xe6 37.♗f5 ♗gf4 38.h4 d4 39.hxg5 hxg5 40.♗h2 1-0. The match 5-5!

MORE STATIC TROUBLE FOR REBEL (& THE REST!) by Bill REID

Here's another very interesting article with a series of games from Bill Reid, always a welcome contributor as he continues to investigate a particular area of chess computer play (statics!) in which he has found some interesting program shortcomings which are not easy to solve.

After his introduction we have the games, interspersed with extracts from our e-mail correspondence, as we discussed the games.

The notes are almost entirely Bill's, but I have added some evaluations and analysis from Fritz, Hiarc and Junior occasionally. In positions where the computer's are still struggling to come up with a correct understanding of what's going on, I find it particularly interesting to check which are the best (and the worst)!

Dear Eric

I hope you are now fully recovered from your illness. I'm sending this by regular mail (Bill and I normally correspond over the Internet) so as not to clog up your e-mail files even more!

This is not the article I really want to write, which is one which takes the 'static/semi-static' idea further.

But every time I work on it, I run into further complications. So not wishing to rush into print with something with holes in it, I'm sending this as a stop gap.

I think my games in the 'Smyslov' opening, as used in Smyslov-Rebel Century, raise some interesting computer chess questions.

Also I really would be interested to know if Rebel Century is ahead of Rebel8 in its handling of this variation.

Did Smyslov Play the Best Line?

So Smyslov had no difficulty holding Rebel Century to a draw? Indeed, as Eric points

out (SS/88, page 8) he must at one stage have had hopes that his endgame technique might triumph.

As it happens, the opening line in this game is one that I have played a number of times against Rebel8, an experience which has taught me that there are new and interesting ideas available quite early in the game.

Here is an example played at 15 minutes for the game.

Reid/Smyslov - Rebel8/Century

[B22] Game 1. Game in 15

1.e4 c5 2.c3 d5 3.exd5 ♖xd5 4.d4 ♘f6
5.♘f3 ♙g4 6.♙e2 e6 7.h3 ♙h5 8.0-0 ♘c6

Here my hopes lie, not in the quiet
9.♙e3 which Smyslov chose, but in the
more enterprising:
9.g4!? ♙g6 10.c4!? ♗d7 11.g5 ♘e4 12.d5
exd5 13.cxd5 ♘b4?

Can Rebel Century do any better here?
Rebel8 itself finds a better move here at
40/2, and the game that followed is shown
after this one

14.a3 ♘xd5 15.♘e5 ♗e6 16.♗a4+



16...♙d8

Note by Eric: Up to here Fritz6 is content for Black. But now, after 17s, ♙d8 drops to B-206.

A few moments later it decides for ♙e7 which shows only B-37 after 1m18. But at 1m37 that changes to B-156. It would, however, have proved better than R8's move.

If 16...♙e7 then 17.♘xg6+ hxg6

18. ♖g4 ♘b6 19. ♖c2 ♖c4 20. ♖xc4
 ♘xc4 21. ♖e1! ♘cd6 22. ♘c3 wins the
 e4-♘
 17. ♖g4 f5 18. gxf6 ♖e8 19. ♖xe8+ ♘xe8
 20. ♘xg6 hxg6 21. ♖e1!

The same clinching move as in our note
 to Black's 16th. 21. fxf7 ♖xg7 22. ♖e1 is
 basically the same
 21... ♘dxf6 22. ♘c3 ♘xg4 23. ♖xe4+ ♘d7
 24. hxg4

and even I can win this from here, says
 Bill! 1-0

Rebel Century, main change in the
 G/15 game:

13...Nb4?

10s Nd4! d7.01 +036 a quick im-
 provement here!

21s d8.00 +030

55s d9.00 +019

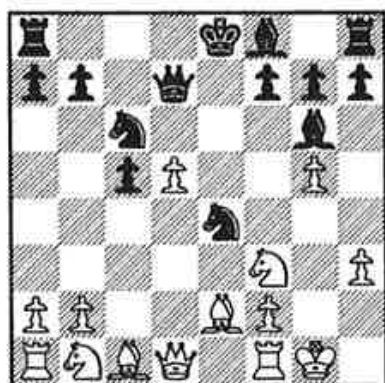
2m34 d10.00 +032

Here is the next game, played
 from the above (Nd4) improvement,
 and at a much slower (Tournament)
 time control.

Reid/Smyslov - Rebel8/Century

Game 2. 40/2

After 13.cxd5



13... ♘d4!

R8 at 40/2. RCent 10s. Fritz6 16s

14. ♘xd4

14. ♘e5?! can also be played here, but
 it is not so promising as Black appears to
 be surviving the complications after
 14... ♖xd5 (even more solid is 14... ♖c7
 15. ♘xg6 hxg6 16. ♖g4 ♖e7!) 15. ♖b5+
 ♘d8 16. ♖f4.

Now 16... ♖e6 seems best (Rebel would

create difficulties for itself with
 16... ♘xg5?! 17. ♖xg5+ and the appar-
 ently strong pawn fork 17... f6 is met by
 18. ♖e1!) – and it's complicated!
 14... cxd4 15. ♖g4 ♖xd5 16. ♖e1



16... ♖e7

Most programs choose 16... ♘d8 (F6
 B+66, Hiarcs B+59, J6 W+16!?), then
 17. ♘c3 ♘xc3 18. bxc3 d3 19. ♖e3 ♖d6
 20. ♖f3 ♖f5 21. ♖xb7 ♖xh3 22. ♖xa8
 ♖h2+ draws

17. ♘c3 ♘xc3 18. bxc3 ♖f8



This sets up an interesting situation
 where, in spite of putting a whole rook
 out of play, Rebel8 thinks the position is
 level. Cp. F6 W+25, J6 W+46, Hiarcs =,
 Crafty17.10 W+124!

This is the position which really inter-
 ests me! Is this a case of the program
 failing to take account of 'semi-static'?
 Or is it calculating that its kingside can
 be unravelled before White's pieces be-
 come threatening?

My feeling is that a human would have
 joined F6, Hiarcs and J6 in preferring
 16... ♘d8, with the analysis as shown
 there leading to a draw.

How would Smyslov fancy White's po-
 sition after Rebel's 18... ♖f8 I wondered!?
 It looked good to me, so I pressed on!

19.cxd4 ♖b4 20.♞e5 ♞c4 21.♙e3 ♙d6
22.♞c1 ♞a6

Eric tells me that RCentury would play 22... ♞xa2 here, so I played a 3rd. game which follows, as in it we must find a different way of winning the black squared ♙ (see strategical note to move 24 of the present game)

23.♙e2 ♞xa2 24.♙c4 ♞a3



Now the main stumbling block to the pawn's progress seems to be the black square bishop. With that out of the way, White might break through? And the h8/♙ is still out of play, so...

25.♞c5!?!?

No, I didn't find this over the board; it was in my preparation!

25... ♙xc5

If Black ignores the ♙ and plays, for example 25...h6, then 26.♞a1 is a pretty good threat. But no chance of this! R8 thinks it is now +159, though at least it seems to be saying I have a pawn and a half's worth of initiative?

Other program's evaluations here are: F6 B+66, Hiarc B+77, RCent B+131, J6 B+91, C17.10 B+117. So Rebel8 is certainly not alone in its optimism!

26.dxc5 ♞b4 27.♞d4 b6 28.c6



28... ♞c5!

This I hadn't expected! F6 now has W+66, J6 W+27, RCent B+107(?).

Hiarc and Crafty prefer ♞e7, the former showing W+45, but Crafty W+20.

I was actually hoping for 28... ♞e8? then 29.♙d2 (or 29.♙f4!) 29... ♞a4? (note 29... ♞c5, which wont win, or save the day for Black, but is certainly better than the move given) 30.♙c3! and Black is in big trouble]

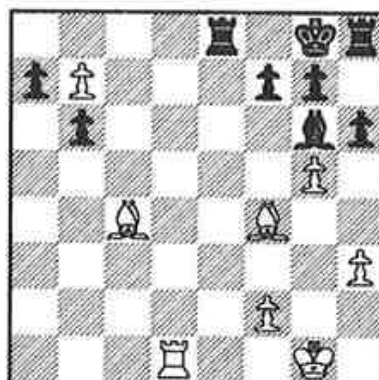
29.♞d7 ♞e7?!

Interruption by Eric: I think 29... ♞f5 is probably the top move here.

Now what would Bill play? 30.♞b7 (30.♞d6+ ♙g8 31.c7 h6 32.gxh6 ♙h7) 30... ♞e8 31.c7 (though 31.♙f1 looks quite nice it may not have too much sting after 31... ♞xe3!? 32.c7 ♞xg5+ 33.♙g2 ♙f5 which seems equal) 31... ♞c8 32.♙a6.

Knowing Bill I reckon he's quite likely to produce something better than this?!

30.♞b7 ♞e8 31.♙d1 ♞xb7 32.cxb7 ♙g8 33.♙f4 h6



All the way through this passage of play Rebel thinks it is ahead. But surely that b/pawn will decide things in White's favour?!

For comparison at this position, RCentury has a small B-22 at move 31, and is -44 here. Others see that Black is in big trouble: F6 shows B-187, J6 B-237, and Hiarc has it B-274!!

34.b8 ♞ ♞xb8

And suddenly Rebel knows the truth - almost instantly (within 10 secs) it registers -225!

35.♙xb8 a5 36.♙d8+ ♙h7 37.♞xh8+ ♙xh8 38.gxh6 gxh6 39.♙c7 a4 40.♙xb6 ♙f5

And now Black can resign, concludes Bill - but it wasn't programmed to do that. 1-0

Back to Bill's letter: So should Smyslov have gone in for the 9.g4 line? Well, probably its complications don't suit someone who would rather apply his skills to an endgame.

On the other hand he may have wondered how much Rebel Century was ahead of its earlier versions.

He may even have suspected that it might come up with the improvement for Black on move 11 which seems to refute the whole variation (and which completely eludes Rebel8).

See if your program can find it!

Best wishes
Bill

Thanks, Bill.

For your info the following is from REBEL CENTURY on my K6/300 laptop.

Please note that I am using the 'upgrade' - Schroder and team have concluded that Century was released with so much knowledge that the resulting slow-down and reduction in search depth achieved was hurting it heavily!

Their 'upgrade' has reduced the knowledge input quite significantly, but speeded it up by as much as an extra 2ply of search over 2 or 3 mins of calculating! That's what I was using for the following timings:-

In the 40/2 game:

22...Qa6 is replaced by Qxa2

At **25...Bxc5** the eval. is +131 instead of +159

27...b6. Here's the RCent search:

22s Qa4 +168
57s -31
1m19 b6 +056
1m37 Re8 +102

28...Qc5. The RCent search:

19s Re8 +145
30s +28
32s Qe7 +64
54s Qc5 +107

32...Kg8. The RCent search:

20s Kg8 -22
28s Be4 -11
1m04 -19

33...h6. The RCent search

28s h6 -25
56s -44

34...Rxb8 shows -225 at 5secs

Hope that's of interest.
With best wishes from **Eric**

Wed, 14 Jun 2000
14 Jun 2000

Dear Eric,

Thanks for your message. I'm pleased that my musings on Rebel's handling of the Alapin-Sveshnikov may be of some interest.

I should have remembered that the power of the machine comes into this. I'm still using my old 150Mhz computer on which Rebel announces itself as 'Elo 2493' - though where it dredges that figure up from, I'm not sure!

As I've said in my notes, it's the position after 18...Kf8 in the 40/2 I sent you that really interests me. To my lowly Elo-rated eye this looks lost for Black! It's going to take three moves to unravel the K rook and the g6 B is a bit offside. Meantime, White's pieces are active and in a few moves the d pawn can be threatening to queen. Is this a classic case of the program not factoring the semi-static into its algorithm? But maybe a GM would disagree? It would be interesting to know.

Incidentally, Century's 22...Qxa2 doesn't seem to help. Here's the 40/2 where I forced it on my R8:

Reid/Smyslov - Rebel8/Century

Game 3. 40/2

1.e4 c5 2.c3 d5 3.exd5 ♖xd5 4.d4 ♘f6
 5.♘f3 ♗g4 6.♙e2 e6 7.h3 ♗h5 8.0-0 ♘c6
 9.g4!? ♗g6 10.c4!? ♗d7 11.g5 ♘e4 12.d5
 exd5 13.cxd5 ♘d4! 14.♘xd4 cxd4 15.♗g4
 ♗xd5 16.♙e1 ♙e7 17.♘c3 ♘xc3 18.bxc3
 ♘f8 19.cxd4 ♗b4 20.♙e5 ♗c4 21.♙e3 ♗d6
 22.♙c1



22...♗xa2

Fritz6 also plays this - Eric.

(Back to Bill): We now have to find a different way of winning the black squared ♗!

23.♗b5 b6 24.♙a1 ♗c4 25.♙xb6!

Bill finds his alternative way of exchanging ♗ for ♗, and will be interested to know that both F6 and Hiarcs also choose this!

25...♗h2+ 26.♘xh2 ♗c7+ 27.♘g2 ♗xb6 28.♗f3 ♗d8

Interestingly RCent (for the first 2m15) and F6 choose 28...♙e8, and after 29.d5 they intend 29...♙xe3!? 30.fxe3 ♗xe3

29.d5 ♗b4



30.♙a4

It is more important to keep the ♗ out of e4 than to gobble up the a/♗

30...♗b8 31.♗d4 ♗d7 32.♗a1 f5 33.gxf6

gxf6 34.♗g4!

I've added the '!' (Eric), as it's the move that causes evaluations to start completely disintegrating. Hiarcs also chooses Bills move almost immediately, and F6 finds it in 13secs.

34...♙b7

This and ♙f7 appear to be the best of a now bad bunch. The various alternatives are, showing F6 evals. at around 30-45secs:

[a] 34...♙f7!? 35.♗xf6 W+256 35...h5 36.♗xh8 hxg4 37.♙xg4 Still W+256, and Hiarcs has W+301;

[b] 34...♙xd5? 35.♗a3+ W+344;

[c] 34...♗d6? 35.♗xd7 W+375

35.♗xf6

F6 eval W+175, though it goes >300 a little later.

35...♙g8 36.♗a3+

W+338

36...♘e8 37.♗e3+ ♘f8 38.♙f4 ♙gg7

39.♙e5+ ♘g8 40.♗xb8

and Black is smashed. But maybe RCentury has more improvements, suggests Bill. 1-0

Dear Bill

Thanks for the latest game, Bill

I didn't really intend to suggest 22...♗xa2 was 'saving' the game, but was mainly just pointing out that RCentury prefers it. It does appear to save a tempo as R8 played it anyway after first going ♗a6, and I thought it might just be a touch preferable.

Regarding this game, and the 'improvements' you wonder if RCentury might find:

At move 28...♗d8 it had Re8 -> d5 Rxe3!? until 2m15 when it changed to R8's Rd8.

Move 30...♗b8 it proposed ♗d6 eval = -> Rxa7 Kg8

Move 31...♗d7 it proposed ♗b1 eval +7 -> ♗e2 ♗f5

By move 34...♗b7 it was showing -183 for Rf7 and changed to Rb7 at 2m31 -79

Move **36...Ke8** had Ke8 -310, so it chose Kf7 at 1m16 -238. This dropped to -274 at 2m03.

The programs still don't get static type issues - I referred to it (and you) on p21 of SS88, which I'm sure you saw.

Mark and I have been trying to improve Hiarcs on this for the past 3 years, but every time we try to increase the importance of issues relating to trapped pieces and lack of piece scope, we find the program usually drops up to 100 Elo points.

How can we teach the program to distinguish between temporarily and long-term trapped pieces? So far, unless the programs see the static piece getting lost in the search, it remains convinced it will get out somehow, sometime! If there's a programming solution to this, none of us has found it yet. There could be a big rating points prize for the first one who does!

With best wishes from: **Eric Hallsworth**

Readers: Before we finish the article, have you checked out the position after White's 11th. from the first game yet, to see if you or your program can spot the improvement for Black there?

1.e4 c5 2.c3 d5 3.exd5 ♖xd5 4.d4 ♘f6
5.♘f3 ♗g4 6.♗e2 e6 7.h3 ♗h5 8.0-0 ♘c6
9.g4!? ♗g6 10.c4!? ♖d7



If not, you may wish to do so before you play through the last section! First play **11.g5?!** and see

what your program chooses within 2-3 minutes.

Bill did tell me what it was, so here's his note for that to me:-

Incidentally, after White plays 11.g5?! the move alluded to in my last para. is 11...cxd!! 12.gxf d3, which wrecks the whole line, alas! Does Rebel Century find it?

Then I sent him the Rebel Century findings on this position:

And the 11...cxd4 which could replace Ne4

13s	Ne4	d9.00	+040
32		d10.00	+041
1m29		d11.00	+021
3m52	cxd!	d11.12	+054

F6 concurs, evaluating 11.g5?! cxd!! 12.gxf d3! as B+122

RCentury however now suggests 13.Re1 and Black at only +13?!

F6's continuation would be 13.fxg7 Bxg7, and now 14.Re1 dxe2 15.Qxd7+ Kxd7 16.Rxe2 Rad8. Black is still +128 says F6.

Note that RCent's continuation 13.Re1 dxe2 14.Qxd7+ will almost certainly transpose to this. Surely it's good for Black?!

I sent this info to Bill, who then wrote:

Wed, 21 Jun 2000

Dear Eric,

So RC finds 11. ... cxd in under four minutes? That means it probably finds it at 40/2 and won't be taken in by all this stuff?

So I will have to work on 11. d5 exd 12. g5. Does it then want to go 12. ... Bf5!?. White may still be o.k. after 13. gxf Bxh3 14.Ng5 (MAY be better than 14. Bf4 and MAY be good for White! But it's all very complicated).

By the way, re my last para., if

White tries to avoid 11. ... cxd by changing the move order and going 11.d5 exd 12.g5, then Rebel is very happy give up its f6 knight (which it isn't after 11.g5) with 12...Bf5! and we are in a whole new world. I didn't want to write a monograph, so I stayed away from that.....

With best wishes,
Bill

Dear Bill

Thanks for your latest e-mail re pursuing the 11.d5 line in view of 11.g5?! cxd4! 12.gxf6 d3!

After 11.d5 exd 12.f6, RCent also goes: 12...Bf5 +81 -> gxf6 Bxh3 Ng5 for a while. But at 2m19 it changes to: 12...Rg8 +82 -> Re1 0-0-0. This, of course, would result in an altogether different scenario from the one in which Black has his king on f8 and a trapped (static) rook on h8!

With best wishes from: **Eric Hallsworth**

Reid/Smyslov - Rebel8/Century

Game 4. New Opening variation, now 11.g5 discarded as unsound



11.d5!

This is what I will work on now!

11...exd5 12.g5 ♖f5

This is the R8 choice, but RCent and F6 both prefer ♜g8 with plans to castle queenside as shown above

13.gxf6 ♗xh3 14.♔g5

14.♗f4 ♗xf1 15.cxd5 is also wonder-fully complicated

14...♗xf1 15.cxd5

This may be good for White, but it's all very complicated! ∞

Fri, 30 Jun 2000

Dear Eric,

Thanks for your interesting comments in reply to my last message. I would have got back to you earlier, but have been away.

I don't know how important the fixing of the 'static' problem is (yes, I saw your kind mention in SS88 of my articles). I suppose it becomes important if human players find ways of manoeuvring programs into such positions and defeating them. But anyway it's important as a theoretical challenge. I suppose we have to come up with some kind of mathematical theorem or algorithm which is computable, but hasn't previously been applied in this field. I think there are some candidates out there, but I'm not a mathematician so can't be helpful!

What I'm working on now is the possibility that the 'static' is a sub-category of a bigger category of chess positions which humans are equipped to deal with, but programs are not. However, when I look for examples from master play they are hard to find! So maybe my speculation is wrong. However, it's not too difficult to invent examples! I don't know what we should conclude from that.

The trouble is that I've got quite a few other projects on hand and can't find time for a serious bit of research on this. However, maybe my little bits and pieces will add up to something before the year's end. I'll let you know if they do.

With best wishes,
Bill

RATING LISTS AND NOTES

A brief guide to the purpose of each of the HEADINGS should prove helpful for everybody.

BCF. These are British Chess Federation ratings. They can be calculated from Elo figures by (Elo - 600) /8, or from USCF figures by (USCF - 720) /8.

Elo. This is the Rating figure which is in popular use Worldwide. The BCF and Elo figures shown in SELECTIVE SEARCH are calculated by combining each Computer's results v computers with its results v humans. I believe this makes the SS Rating List the most accurate available for Computers and Programs anywhere in the world.

+/-. The maximum likely future rating movement, up or down, for that particular machine. The figure is determined by the number of games played and calculated on standard deviation principles.

Games. The total number of Games on which the computer's or program's rating is based.

Human/Games. The Rating obtained and total no. of Games in Tournament play v rated humans.

A guide to PC Gradings:

386-PC represents a program running on an 80386 at approx. 33MHz with 4MB RAM.

486-PC represents a program running on an 80486 at between 50-66MHz with 4-8MB RAM.

Pent-PC represents a program on a Pentium at approx. 100-133MHz, with 8-16MB RAM.

PPro-PC represents a program on a Pentium Pro/233, or a Pentium MMX/233, 32-64MB RAM.

Users will get slightly more (or less!) if the speed of their PC is significantly different. A doubling or halving in MHz speed = approx. 40 Elo; a doubling or halving in MB RAM = approx. 5 Elo.

Approx. guide if PentiumPro2/233 = 0

Pent3-K7/660	60	Pentium3-K6-Cel/450	40
Pent K6-Pro2/300	20	Pent Pro2-MMX/233	0
Pent/150	-40	Pent/100	-60
486DX4/100	-120	PentDX2/66	-140
486DX-SX/33	-200	386DX/33	-260

RATING LIST (c) Eric Hallsworth. PC Progs		Sel	Srch	89	August	2000	
BCF Computer	Elo	+/-	Games	Pos	Human	Games	
253 FRITZ6A PPRO-PC	2631	17	689	1	2527	25	
252 JUNIOR6A PPRO-PC	2619	19	545	2	2560	12	
251 REBEL TIGER PPRO-PC	2610	23	382	3			
250 HIARCS732 PPRO-PC	2606	14	1089	4	2538	9	
250 HIARCS7.1 PPRO-PC	2603	13	1204	5			
248 SHREDDER4 PPRO-PC	2585	19	555	6	2530	15	
248 FRITZ532 PPRO-PC	2584	14	1070	7			
247 NIMZ0732 PPRO-PC	2583	18	606	8			
246 NIMZ099A PPRO-PC	2575	17	724	9			
246 FRITZ516 PPRO-PC	2573	13	1279	10	2443	6	
246 CHESSMASTER 6000 PPRO-PC	2569	24	346	11	2524	22	
246 NIMZ098 PPRO-PC	2568	12	1295	12	2405	10	
245 JUNIOR5 PPRO-PC	2564	13	1153	13			
243 HIARCS6 PPRO-PC	2549	13	1165	14	2522	24	
242 SHREDDER3 PPRO-PC	2540	38	145	15	2641	2	
242 REBEL9 PPRO-PC	2539	14	1050	16	2607	14	
242 REBEL-10 PPRO-PC	2538	26	317	17	2528	17	
241 REBEL8 PPRO-PC	2534	20	538	18			
241 MCHES5 PRO7 PPRO-PC	2528	14	1056	19	2530	1	
240 MCHES5 PRO6 PPRO-PC	2526	17	699	20	2474	12	
240 MCHES5 PRO8 PPRO-PC	2525	16	758	21			
240 CHESS GENIUS5 PPRO-PC	2524	13	1186	22	2389	6	
240 REBEL CENTURY PPRO-PC	2521	26	303	23	2522	43	
239 SHREDDER2 PPRO-PC	2517	15	875	24	2148	6	
236 GANDALF3 PPRO-PC	2492	27	277	25			
234 JUNIOR4.6 PPRO-PC	2473	44	108	26			
234 HIARCS6 PENT-PC	2473	11	1680	27	2540	2	
233 FRITZ5.16 PENT-PC	2468	35	170	28			
233 HIARCS5 PENT-PC	2467	19	585	29			
233 KALLISTO2 PPRO-PC	2466	22	412	30			
232 REBEL8 PENT-PC	2462	10	2106	31			
232 REBEL9 PENT-PC	2460	16	805	32			
231 CHESS GENIUS5 PENT-PC	2449	11	1567	33			
230 CHESS GENIUS3 PENT-PC	2440	14	1028	34	2658	10	
229 CHESS GENIUS4 PENT-PC	2438	13	1199	35	2387	16	
229 MCHES5 PRO6 PENT-PC	2434	11	1721	36	2316	4	
229 HIARCS4 PENT-PC	2432	14	1008	37	2348	6	
228 REBEL7 PENT-PC	2431	14	1082	38	2242	11	
228 REBEL6 PENT-PC	2429	19	594	39	2403	6	
228 MCHES5 PRO5 PENT-PC	2425	15	925	40	2423	19	
227 CHESSMASTER 5000+5500 PENT-PC	2419	24	347	41	2401	13	
227 NIMZ03.5 PENT-PC	2419	15	961	42	2426	6	
226 JUNIOR4.0 PENT-PC	2409	16	844	43			
226 NIMZ03.0 PENT-PC	2408	16	843	44			
225 HIARCS3 PENT-PC	2406	18	628	45	2631	6	
225 CSTAL2 PPRO-PC	2403	31	218	46	2177	6	
225 CHESSMASTER 4000 PENT-PC	2400	45	104	47	2394	12	
224 SHREDDER1 PENT-PC	2398	37	151	48	2068	6	
223 CHESS GENIUS4 486-PC	2388	15	919	49			
223 MCHES5 PRO4 PENT-PC	2387	19	597	50	2497	13	

SELECTIVE SEARCH

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ARTICLES, RESULTS, GAMES and SUBSCRIPTIONS
 should be sent direct to Eric, please!

