Selective Search

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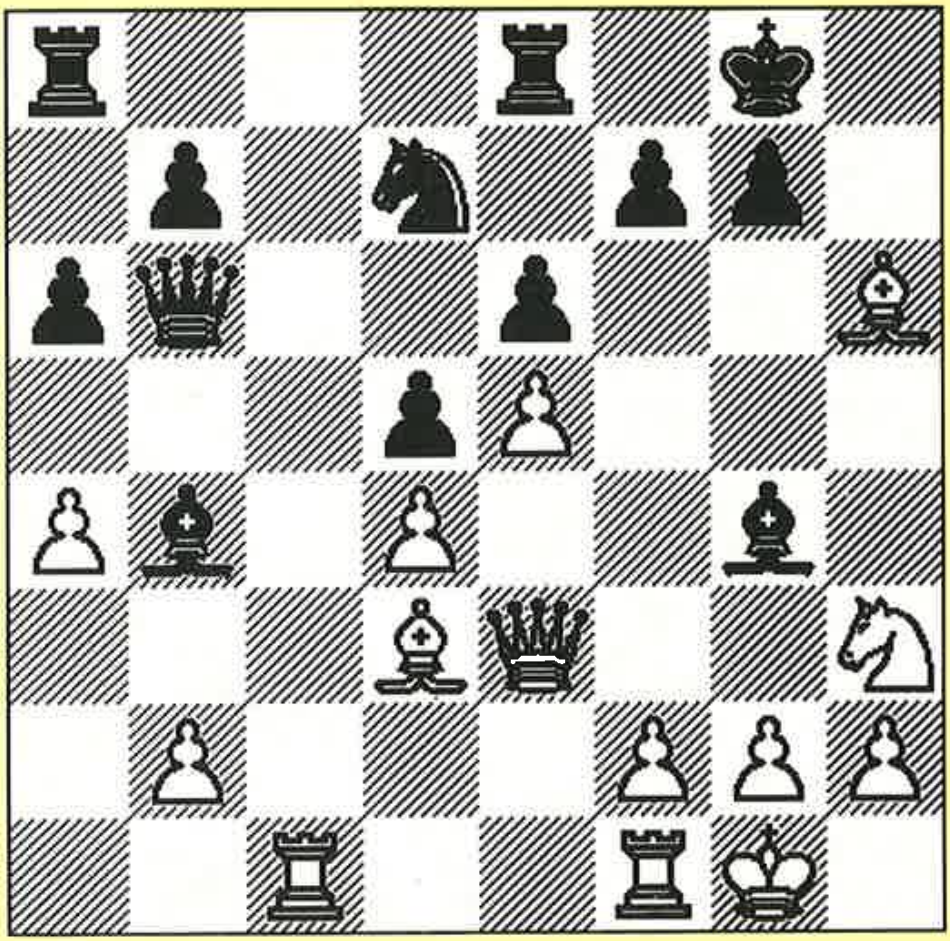
THE COMPUTER CHESS MAGAZINE



The new Hiarcs 3.0 takes on the R30
(which side would you rather be?)

£2.00

Issue 054

Selective Search

is a review of the UK chess computer scene published six times a year by

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Selective Search is compiled and produced at the offices of *The British Chess Magazine* on behalf of Countrywide Computers Ltd. Articles submitted for publication should be addressed to: Simon Knight, Editor, Selective Search, c/o The Chess Shop, 69 Masbro Road, Kensington, London W14 OLS. Tel: 071 603 2877. Fax: 071 371 1477.

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NEW PRODUCT REVIEWS:

Saitek / Kasparov Executive and GK2100

The first of these two new Saiteks, the Executive, appears to have all the ingredients necessary to make it a very successful model. First of all, its hundred pound price point (or £99.95, to be precise) is a very popular one amongst first-time chess computer buyers, yet its appearance and performance are well above the standard of the raft of 'bargain basement' models to be had on the market.

Measuring just 12 by 9 inches, the Executive borrows from Mephisto's 'laptop' concept by having a snap-on lid to protect it while travelling, and additional disc-pieces are apparently available as an optional extra, although I have not seen any yet.

The diminuitive size and the lid combine to make it a very portable table top. Visually, the Executive represents a shift away from the 'boring rectangle' approach of most computers, replacing it with a modern 'curvy' styling that works very well.

Features, program, and technical specifications are all as per the well-known Travel Champion, itself a highly successful model, which puts the Executive's strength at circa BCF 163.

Next up is the GK2100, the update to the GK2000. At £159.95, the GK clashes head-on with both the identically-priced Mephisto Modena, and with the Novag Emerald at £10 less. In appearance, design and functionality, I think most potential customers would rate this new Saitek above its two competitors; it certainly looks like a lot of chess computer for the money, and the casing is similar to that used on the Risc 2500, except that it is black and not silver - a more appropriate colour, in my view at least.

All recent Saiteks boast a Liquid Crystal Display that is big, clear and easy to read, and that applies to both models reviewed here. From the examples I have seen so far, build quality at the Saitek factory seems to have improved of late as well. The only quirk which irritated me was its habit of starting White's clock the instant you press 'new game' - most computers have the courtesy to wait until the game actually starts!

The program (which it shares with the auto-sensory President model) is by Franz Morsch, of Fritz fame, so good tactical ability for its class could be confidently expected. How well it would do in other areas I tested by playing a ten-game match against each of its above-named price rivals, at game in 60 minutes each.

The GK2100 won against both rivals; by 5½-4½ versus the Emerald (+4 -3 =3), and by 6-4 (+5 -3 =2) against the Modena (also a Morsch program, but an earlier one). The Emerald was standing better in two of the games that were eventually drawn, throwing away the win in each case through its relatively poor endgame ability.

The Modena, in my opinion, has a better all-round game than the Emerald, but seemed to play with less energy than the GK2100. With computers this close in strength, ten-game matches do not provide anything like statistically reliable results, but having watched the games, I feel the GK2100 deserved its victory in both cases.

Both of these new Saiteks look likely to become class leaders, and can be wholeheartedly recommended.

En Passant

The new ChessBase for Windows (CBW) has finally arrived, and represents a vast improvement over all the previous versions. This is in fact the second new chess database product to arrive on the market in the last couple of months; Tasc, the Dutch company of R30 fame, have also brought out 'Tascbase', although I have seen little promotion of this fact to date, so their new product remains pretty much a well-kept secret. Tascbase is much better designed than the old Chessbase, but the arrival of CBW will surely be a blow to its prospects.

The concept behind Chessbase is a superb one, yet when the idea of a chess database was first put forward, there were many in the industry who thought it would scarcely get off the ground. The men who turned down the Beatles no doubt felt even worse, but ChessBase has now sold many thousands of copies worldwide and established itself as the clear market leader, despite the number of 'me-too' products that sprang up after it. Even so, there are many Chessbase users (myself included) who thought that while the idea was good, the execution was pretty appalling. It was a very hard program to find one's way around, and the manual hardly helped either.

All this has finally changed with the new ChessBase for Windows. The ugly graphics have been completely overhauled and now look very smart and ordered, and the use of icons make everything far easier to use.

CBW can do far more than any previous version of the program, but perhaps more important still, owners will quickly be able to extract the full benefit and versatility on offer. The Windows format means that one can, for example, compare games simultaneously on-screen, with diagrams and notation next to each other, and one can merge databases, copy or delete games and so on, just by dragging the mouse. Furthermore, the previously untapped potential for extracting performance stats is now on offer; with CBW, one can, for instance, ask for any thematic motif which occurs in a particular opening, or find out the win-ratios for any given opening or line.

I use Chessbase for typesetting two magazines, so I was very pleased to see that the new CFW has room for unlimited annotations - an earlier version had the inane habit of allowing one to type merrily away, without ever telling you that you had reached the end of one of only three lines available! Then again, the grossly misnamed 'intelligent heuristics' system, designed to second-guess which piece you wanted to move, used to be quite unbelievably stupid, helpfully moving your king into check before crowing 'Illegal Move!', to quote just one example. Both of these nasty habits have now disappeared.

One drawback is that with CBW, you cannot use a Fritz program as a 'chess engine', since Fritz is not a Windows program. Instead, one has to buy a separate 'analysis module', which is either: (a) not terribly strong by today's standards (John Nunn); or (b) excellent (Francis Monkman). I don't know. I haven't got one yet. However, this module does have the advantage of being able to analyse up to ten different positions 'in the background' while you are working on something else. Fritz and Chessbase are produced by the same company, and one cannot help feeling that they may have boosted the appeal of one of their products - Chessbase - at the expense of their other one.

After all, the Chessbase compatibility of Fritz was one its principal selling points; without it, there is one less reason to buy Fritz than one of its stronger rivals - e.g. Genius 3 or Hiarcs 3!

Owning and using a chess database system such as ChessBase is widely reckoned to be one of the most sure-fire ways to improve your game, but a word of warning for potential purchasers - FM Ali Mortazavi is firmly of the opinion that CFW is only viable with a 486 PC (and preferably a Pentium!) as with anything less, things become intolerably slow, and liable to frequent crashes. It's been okay on my lowly 386 though...

Murray Chandler's piece for *Selective Search* (S/S052) received a mention in the Autumn (No. 23) edition of *Kingpin*, sometimes referred to as the 'Private Eye' of chess magazines, and invariably a good read. FM Graham Burgess, Chess Editor for Batsford, has an article on the role of computers in analysis, and is inviting Kingpin readers to send in positions for him to work on.

Graham says "I intend to use a computer for the analysis. However, those of you who have used computers for analysis will be aware that this can be rather frustrating; you leave them on overnight, and then manage to overturn the machine's assessment with a few intuitively obvious moves, which, for whatever reason, the computer's pruning routines failed to take particularly seriously. My method is to watch over the computer's analysis and, if it seems to be going down a blind alley, to direct it toward a more fruitful area. Of course, care must be exercised in this respect, since one of the computer's greatest strengths is that it does consider counter-intuitive moves without prejudice...

The human overseer needs reasonably good intuition and an understanding of areas in which the computer is weak. In particular, when one side's play can only be justified in one way (e.g. opening the h-file and playing for mate), then the human must force the computer to look at lines in which this plan is implemented; else it may be about ten ply (half-moves) before the tactics begin (and naturally it is the tactics for which you are using the computer in the first place) and so the critical lines will only have a tiny proportion of the analysis devoted to them".

Graham then quotes the R30 v Genius 68030 game from S/S 052 with extensive analysis of his own (he knew about it because, as author of Batsford's *The Complete Alekhine*, Murray had faxed his draft through for Graham's comments), and then some very interesting examples of other positions he has been working on. If you would like to obtain a copy, *Kingpin* should be available from any general chess retailer.

Underpromotion: Our thanks to John Randall for the following letter on one facet of chess that computers tend to ignore. As for his remark about waiting for the "forthcoming" Saitek equivalent of the Sapphire though, we can only say that while there probably will be one in time, this is the first we've heard of it!

Dear Sir

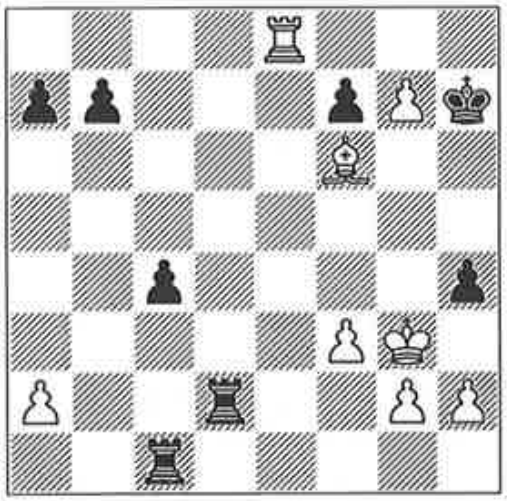
Selective Search No. 053 reached me yesterday, and I would like to say how much I look forward to playing the games and reading its articles, especially those regarding computer abilities and playing strengths of new models.

The timing test on page 7 rather surprised me by the length of time even the very best computers took to took to solve what is, after all, only a mate in seven - with rather restricted moves available to Black's king. From experience I have found it is often quicker to use analysis rather than the brute force mate-finding mode, but I suppose that is not the object of the exercise!

My real reason for writing though, is to point out what I think your new product review failed to do when commenting on the new Diamond / Sapphire models from Novag. You rightly say that playing style is typical Novag, with sharp ingenious play with its unpredictable consequences. Possibly capable of beating the best, and just as capable of losing to lesser opposition - and I entirely agree. But, and for my money a very big but, the importance of the use of under-promotion is not mentioned at all.

On page 20, playing a Petroff against Mephisto Nigel Short, we reach move 34 when a mate in 10 is declared. The game had to be completed in 60 minutes each, which obviously limits the time for computing and makes calling a mate in 10 highly commendable (perhaps it ought to try the test from Frank Holt), except that there is actually a mate in 7 by simply under-promoting to a knight instead of making moves which are purely expedient.

Novag products have been guilty of this peculiarity in the past, and never more so than with their Scorpio / Diablo models. When I complained about this, I was told that from a practical viewpoint it was of little importance. While I must admit that from memory, I have only won one game by under-promoting, it does occur far more than is allowed for. I wonder if the Diamond / Sapphire is virtually the same program as the Scorpio / Diablo models, but speeded up. That of course would automatically account for it earning a higher grading in tournaments, while being little better at postal chess. I personally like portable computers for their ease of use, but until I see the forthcoming Saitek product and have their merits compared, I don't think I will be ordering a Sapphire.



Mr Randall then gives the shortest route (from the diagram position): **34 ♔f4 ♖xg2 35 ♖h8+ ♔g6 36 g8=♘! ♖g4+ 39 ♔xg4 ...** and **♖h6** mate follows.

The comment about the Diamond / Sapphire program being "virtually the same" as that in the Diablo / Scorpio is perhaps a little harsh. True, it is by Dave Kittinger (Novag are the only chess computer manufacturer who have consistently stayed with the same programmer), but for one thing he has had a long, long time to improve upon the Scorpio program, and secondly, the c. 15 BCF point jump of the new program over the old could not possibly have been achieved just with the increase in speed (H8 at 26.6Mhz, compared to 68000 at 9Mhz on the old Scorpio / Diablo). Despite occasional claims to the contrary, upgrades for any program - PC or dedicated - are an evolutionary process; the developer doesn't go back to the drawing board and start from scratch!

HISTORY CORNER...

Chess computers have now been around sufficiently long to have acquired an antecedence. While they haven't yet been going long enough to divide them up into categories such as 'vintage' and 'veteran', early models are definitely beginning to gain that air of rustic charm that makes for collectability.

You doubt us? We rest our case with the following (100% accurate) transcription of a fax from a gentleman in Germany.

'Here I send you the List of Chess Computers I'am searching for:
Fidelity Chess Challenger 1, Fid. Grandmaster Voice, Fid. Champion Elite, Fid. Prestige, Fid. SPS 3.5, Fid. Chess Chall. Super 7, Fid. Chess Chall. 10 de Luxe, Printer for Fidelity. Boris Handroid, Boris Grandmaster, Sandy Destiny, Sandy la Regence TSB IV.
Scisys Chess Champion MK IV, Chess Champion MK VI+, Electronic Sensor Board, President Chess, President Chess Turbo, Chess Champion MK VI Turbo. Novag Robot, Novag Savant Royale. Compuchess I & II. Conic Tracer Chess 7012, Conic Computer Chess 7013, Mattel Computer Chess. Bogol 5.0 ASB. Electronic Chess CC-700 Tryom.
Also any Chess Computer from Chess King and any other from 1976 to 1985. If you can help me, please send me an fax.'

Well, S/S readers, can you help him? If you can't, we don't know who can. Have a rummage round the attic, make a foray into that cupboard under the stairs; if you find a clockwork chess computer, do let us know (and you might be able to put a bit of money toward buying a boring modern one - the sort that knows all the rules and often beats you severely...).

Good to see though, that the tradition of giving chess computers ludicrous and inflated names has a proud and ancient pedigree. The 'Boris Grandmaster' represents a pinnacle in the latter category that can surely never be surpassed, while I can only hope that rolling the title 'Sandy Destiny' (for a CC?!?) around your tongue brings you as much pleasure as it does me...

While in this nostalgic frame of mind, I happened across a 'Chess Computer Buying Guide' in a post-Caxton edition (Oct. 1982) of *Chess Life*, the excellent US chess magazine. Rather to my surprise, I found it quite interesting. Most of the piece is of course entirely obsolescent - though still interesting in an historical sense - but what Grandmaster Arthur Bisguier says about ratings is just as true now - and still just as misunderstood - as it ever was. If you can discern any meaning at all in his first paragraph you're a better man than me, but apart from that it makes a good read. A few extracts for you...

"You could spend a lifetime playing a particular chess computer without reaching a definite conclusion about the strengths and weaknesses of its many namesakes. I suspect that concrete evaluations - the immutable kind that apply in all situations - simply don't exist. (Eh? Ed.)

"There are as many reasons for this as there are chess computers. Foremost, of course, is the fact that technological advances quickly make yesterday's eagles into tomorrow's turkeys..."

"...Unfortunately, the 'obvious' way to evaluate these machines - using ratings - is not entirely satisfactory. Many chess players share a common misconception: that their rating is a measure of their playing strength. Not true. Ratings measure performance. After all, when your rating goes down it rarely means you're getting weaker. It simply means you've fallen on hard times. The rating system's margin for error is a plus-or-minus 50 points (USCF). Most players' ratings will swing in a 100-point range, with gradual increases to reflect improvement. No-one has yet discovered how to determine what constitutes an 'absolute' rating of, say, 1500...."

"...Therefore, after many hours of testing each of the machines listed in the box below, I've sorted them into three categories... advanced, intermediate, and novice..."

GM Bisguier then gave the following evaluations: *Advanced* - Applied Master Chess Trio, Fidelity Champion Sensory, Fidelity Challenger 9, SciSys Mark V. *Intermediate* - AVE Auto-response board, Fidelity Voice Sensory, SciSys Sensor Chess. *Novice* - Fidelity Challenger 6 and 7 and 8. Fidelity Mini Sensory and Voice Challenger, Mattel Computer Chess, SciSys Chess Traveller, Executive Chess and Graduate Chess.

Another article by Evan Katz in the same *Chess Life* issue gives some facts and figures about the size of the US market, and quotes Alan Mead of Applied Concepts: "Things are getting too competitive. There isn't a big enough market to support eight firms. I predict a shakedown wherein there will be only a few firms left in the next 12 to 24 months." Flicking through the mag, there are a few other snippets to savour; an extract from an Applied Concept ad reads: "Mr Pirkle also contends that Applied is looking into the feasibility of upgrading existing (Great Game Machines) to the *4 megahertz* speed...", (wow!) and a Buyers Guide Chart has categories such as 'Take Back: No', 'Switching Sides: No', Underpromotion: No: 'Levels: 4'...

MEPHISTO GENIUS 3.0

Richard Lang's new Genius needs little by way of formal introduction: sufficient to say that this is (to coin a phrase) probably the best chess program in the World, and that its exploits at the London PCA event were covered in S/S 053. For the record though, we should just point out that Mephisto Genius 3.0 is available right now from Countrywide at £89, or £45 as an upgrade from Genius 2.0 (on receipt of your Genius 2.0 disc).

Apart from a hike in strength of around 60 Elo points, key improvements to note are the ability to import ChessBase and Bookup files, on which it can then provide analysis and evaluation; a much more rational and orderly way of storing games in its database; openings now named on-screen. As with Genius 2.0, you can, for an additional £99, buy a massive extension to its openings book, giving the program access to an incredible 2 million move library - think of the work involved (and the study benefits to you) and you'll have to agree that this optional add-on is also tremendous value...!

NEW PRODUCT REVIEW:

Chess 232 PC-Chessboard

It isn't often that an S/S new product review is of a genuinely, completely new kind of product, but that is certainly the case here.

Chess 232 is an auto-sensory board that links up to your PC, enabling you to overcome the one great drawback of playing with a Personal Computer rather than a dedicated machine - the inability to use real pieces on a real board.

Mind you, our review was hindered by a minor technical hitch - we couldn't get ours to work. Power supply was okay, since we managed to get the 64 LEDs to blink merrily away, and our PC informed us that the 232 was indeed linked up to it, and was ready to go. This latent state of readiness was as far as we got, however, despite following the manual's instructions to the letter.

While a reviewer would find it rather challenging to test a dormant chess computer, the impediment is not so serious in this case. Presumably the vast majority of 232s actually work, or can eventually be made to do so. Once this is achieved, there is little left to test, and its job is simple enough to be left to the imagination: move a piece on the board, and the corresponding piece will be moved on the screen also. End of story, but what a boon, and what a great idea!

Like many other people, I have always greatly preferred playing with a 'real' chess computer rather than with a PC, but now owners of an IBM-compatible box really can have the best of both worlds - a decent-sized auto-sensory to play on *and* the information-rich display of a big screen..

Combine these virtues with the option of being able to call up a wide variety of top-class programs each at very little extra relative cost (just imagine a Pentium, a PC Board, and Genius and Hiarcs 3) and it all adds up to the best system possible.

Chess 232 says it is compatible with the following programs: Rebel 6; Genius 1,2, and 3. M-Chess Pro 3.5; Fritz 2 and 3, Hiarcs 3, and Kallisto.

Before calling Countrywide to place your order, however, there are a couple of things you may like to take into consideration. The first is that, hand on heart, I cannot say that the appearance is everything it might be for 5p change from £300. The veneer looks and feels for all the world like wood-look plastic, and our example, at any rate, has a few little bubbles on the surface. Saitek can manage a whole chess computer in wood for exactly the same money (i.e. the President), but I suppose that the makers of 232 can fairly point out that original products like this, with all their R&D costs, inevitably come at a premium.

The second point to note is that the 232 will not have the field to itself for very long. Rivals from Tasc and Saitek will be appearing in the not too distant future. Given these names, it is not inconceivable that the former will be more expensive than the others but very good indeed, while the latter may well aim at providing unbeatable value overall.

We will of course be looking at both these products when available. If the concept of a PC board is too good for you to want to wait and see though, buy a 232!

NEW PRODUCT PREVIEW:

HIARCS 3.0

As you read this, the brilliant new version of Hiarcs will definitely be available from Countrywide Computers; the program I have seen is a pre-production prototype, but this has been more than enough to convince me that, even in the welter of good players now available for IBM-PC's, this one is going to be something special.

The steep rate of climb from one version of Hiarcs to another singles out British programmer Mark Uniacke as a man with exceptional talent; the original version gave a taste of what was to come, but had its flaws; version 2.0, however, was acknowledged as one of the very best around (and, as you probably know, version 2.1 won last year's World Computer Chess Software Championship).

Since then, PC chess buffs have told me that, of all the programs they can call up (and some have had every one of the big names), Hiarcs is their favourite opponent, simply because they get more exciting games from it than they do with any other. It is Hiarcs' unique and original style which is its true claim to fame, and if 2.0 was good in this respect, I can assure you that 3.0 is even better - a lot better!

Hiarcs 3.0 is claimed to be 80 /100 Elo stronger, and from my limited experience with it so far, I believe it. I've played a few blitz games against the R30 and the Berlin Pro so far, (3.0 scored over 50%) but only one rateable game, which is the amazing one which follows.

New features, cold statistics, and a more sober evaluation will have to wait until further tests, but this is a program you are going to want!

Slav

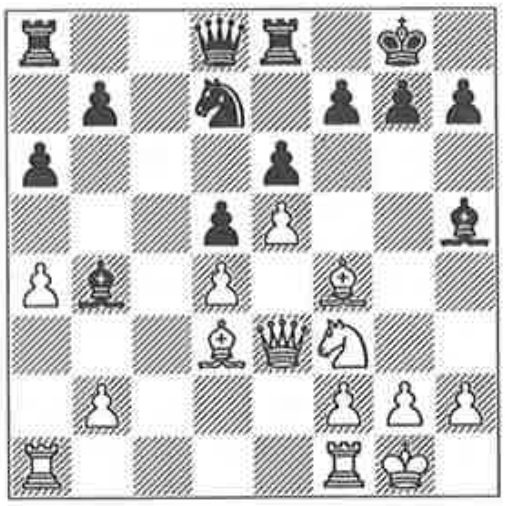
□ **Hiarcs 3.0 (aggressive style) 486/33**

■ **Tasc R30 (active style)**

30 moves in 75 mins, then 60m for all

1 d4 c6 2 c4 d5 3 ♘f3 ♘f6 4 ♘c3 dxc4 5 a4 ♗f5 6 e3 e6 7 ♗xc4 ♗b4 8 0-0 0-0 9 ♕e2 ♘bd7 10 e4 ♗g6 11 ♗d3 ♗h5 12 ♗f4 ♖e8 13 e5 ♘d5 14 ♘xd5 cxd5 15 ♕e3 a6

Up to now, both programs had played from book, so they had lots of time for the next 15 - they made good use of it..!



16 ♖ac1 ♕b6 17 ♘g5 h6 18 ♘h3 ♗g4 19 ♗xh6 gxh6 20 ♕xh6 ♗f5 21 ♕g5+ ♔h8 22 ♗xf5 exf5 23 ♕xf5 ♘f8 24 ♕xf7 ♖e7 25 ♕xd5 ♘e6 26 ♖cd1 ♖d8 27 ♕e4 ♖xd4 28 ♖xd4 ♕xd4 29 ♕xd4 ♘xd4 30 f4 ♖c7 31 g4 ♖c2 32 ♖f2 ♗d2 33 ♔g2 b5 34 axb5 axb5 35 f5 b4 36 e6 ♔g8 37 e7 ♔f7 38 f6 ♗c1 39 ♖xc2 ♘xc2 40 g5 ♔e8 41 b3 ♘d4 42 g6 ♘f5 43 g7 ♘h6 44 ♘f2 ♘g8 45 ♘e4 ♗f4 46 h4 ♗e5 47 h5 ♗xf6 48 ♘xf6+ ♘xf6 49 h6 ♔f7 50 ♔g3 ♔g8 51 ♔h4 ♔f7 52 ♔g5 ♘e8 53 ♔f5 ♘c7 54 ♔e4 ♔g8 55 ♔e5 ♘e8 56 ♔e6 1- 0.

SAPPHIRE REVISITED

After our remarks in S/S 053 that the new Novag Diamond / Sapphire was capable of beating just about anyone and losing to almost anything, reader Nicholas Shakel sends us this game against the Fidelity Elegance - but all credit to the Elegance though!

□ **Novag Sapphire**
■ **Fidelity Elegance**
Reti

1 ♘f3 ♘f6 2 g3 g6 3 ♗g2 d5 4 d4 ♗g7 5 ♘c3 0-0 6 ♘e5 c6 7 ♕d2 ♕b6 8 ♘a4 ♕c7 9 ♕b4 ♘a6 10 ♕c3 ♘e4 11 ♗xe4 dxe4 12 ♗f4 g5! 13 ♗d2 c5 14 ♗xg5 f6 15 ♗f4 fxe5 16 ♗xe5 ♗xe5 17 dxe5 ♗e6 18 ♕e3 ♕xe5 19 0-0-0 ♖ad8 20 ♘c3 ♘b4 21 f4 ♕f5 22 ♖xd8 ♖xd8 23 g4 ♕f6 24 ♕xc5 ♕xf4+ 25 ♔b1 ♘c6 26 ♕b5 ♖d7 27 h3 ♗f7 28 ♕a4 ♖d4 29 ♕b5 ♖b4 30 ♕f5 ♕xf5 31 gxf5 ♘d4 32 ♖g1+ ♔h8 33 ♖f1 e3 34 ♘d1 ♘xe2 35 ♘xe3 ♘c3+ 36 ♔c1 ♘xa2+ 37 ♔d2 ♖xb2 38 f6 exf6 39 ♖xf6 ♔g7 40 ♖d6 ♔f8 41 ♖d8+ ♔e7 42 ♖h8 ♗g6 43 ♖c8 a5 44 ♖a8 b6 45 ♖a7+ ♔d6 46 ♖b7 a4 47 ♖b8 b5 48 ♖b6+ ♔e5 49 ♖b8 ♗e4 50 ♖e8+ ♔d4 51 ♖d8+ ♔c5 52 ♖c8+ ♔b6 53 ♖d8 ♗g6 54 ♖c8 h5 55 ♘d5+ ♔a6 56 ♘f4 ♗e4 57 ♘xh5 ♘b4 58 ♔e3 ♗f5 59 ♖c5 ♘xc2+ 0-1.

We have a reader who purchased a second-hand Saitek Risc 2500 privately.

He wants to put his mind at rest that it is indeed the 512k upgrade he has bought.

Does anyone have any positions with differing solving times for both the 128k and 512k? Please let us know if you do.

From Mr. Morgan (circa 150 BCF) we also have the following debacle. Our reader must have enjoyed this one!

Caro Kann
□ **Morgan**
■ **Novag Sapphire**

1 e4 c6 2 d4 d5 3 exd5 cxd5 4 c4 ♘f6 5 ♘c3 e6 6 ♘f3 ♗e7 7 c5 0-0 8 ♗d3 b6 9 b4 a5 10 ♘a4 ♘fd7 11 h4 axb4 12 ♘xb6 ♘xb6 13 ♗xh7+! ♔xh7 14 ♘g5+ ♔g8 15 ♕h5 ♗xg5 16 hxg5 f6 17 g6 ♖xa2 18 ♕h7+ 1-0.

Just to balance things though, here is the Diamond/Sapphire's fine win over grandmaster Valery Salov, ranked seventh in the world at 2685 Elo. This was from a 30-board Simultaneous display that Salov gave, and was the Russian's only loss.

Queen's Pawn
□ **Valery Salov**
■ **Novag Sapphire**

1 d4 ♘f6 2 c4 e6 3 g3 d5 4 ♗g2 ♗e7 5 ♘f3 0-0 6 0-0 ♘bd7 7 ♕c2 c6 8 b3 b6 9 ♖d1 ♗a6 10 ♗b2 ♖c8 11 ♘bd2 c5 12 ♖ac1 cxd4 13 ♘xd4 b5 14 ♕b1 bxc4 15 bxc4 ♘c5 16 cxd5 ♘xd5 17 ♘2b3 ♘xb3 18 axb3 ♗g5 19 ♖xc8 ♕xc8 20 ♕a1 ♖d8 21 ♕a5 ♗xe2 22 ♖e1 ♗a6 23 ♘xe6 fxe6 24 ♗h3 ♖d6 25 ♗a3 ♖c6 26 ♗xe6+ ♖xe6 27 ♕xd5 ♔f7 28 f4 ♗f6 29 ♖c1 ♕d8 30 ♕xd8 ♗xd8 31 ♗c5 ♗b6 32 ♗xb6 axb6 33 ♖c7+ ♖e7 34 ♖c6 ♖e1+ 35 ♔f2 ♖f1+ 36 ♔e3 ♖f3+ 37 ♔d4 ♖xb3 38 f5 ♖b5 39 g4 ♖b4+ 40 ♔e5 ♖xg4 41 ♖c7+ ♔f8 42 h3 ♖c4 43 ♖a7 ♖c5+ 0-1.

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NEW PRODUCT REVIEW: Trompowski Tiger

*By **Mike Healey** of Countrywide*

An attractive wooden board housing a strong computer, at a price tag of only £169, sounds rather a snip, so what exactly is this beast?

The concept is not entirely new, in that Fidelity had a computer years ago called the Decorator, which comprised a wooden board built around a Voice Chess Challnger. Some readers will remember the old VCC, with its Dalek tones and formidable playing ability (formidable, that is, if pitched against someone who'd learnt to play chess in the previous half hour).

This latest duo is just a wee bit better than that! For a start, the chess set itself is a high quality product, built by specialist Gurali craftsmen in the Tatra mountains of southernmost Poland. You may ask: why have them made by these fierce and eccentric mountain people, when a modern factory could turn them out by machine at a much faster rate? Essentially, because the Gurali never do things by half. One could say they lead a simple life, but boy - do they lead it. A wedding, for example, to which just about everyone in the village would be invited, can easily last for three entire days, with monumental feasting, and perhaps just the occasional libation! Despite such excesses (or maybe because of them) they're a talented people, very proud, and their designs are admired throughout much of the world.

The drawer of the Trompowski has a large area to accommodate the wooden, felted pieces, but you need extend the drawer only half the distance to reveal the computer unit (the Tiger). Starting life as a Travelmaster, it has undergone a genuine metamorphosis, over three distinct stages of development, and is now a reliable key-in computer, with the same strong program and wide range of features. The unit can be taken out and operated on its own (mains or battery), but it is primarily intended to be used inside the specially designed board.

Available now for immediate despatch, there is not even an extra charge for the odd rhomboid-shaped or 7 by 7 board, produced the morning after a wedding! MH

How well our photo of the Trompowski Tiger will reproduce I don't yet know as I write, but you can see above!

What is more certain is that this really is a very attractive set, and quite unique as a modern-day computer-and-board combo; definitely one for your Christmas list, we think. Purchasers so far have been delighted with the set and the program (and the value!), so mail order is a safe bet. If we're within driving distance for you though, come and see it in the wood... SK

THROUGH THE LOOKING GLASS

...Or one man's view of how chess programming should develop in the future. As a keen protagonist for Oxford Softwork's CCSII-Tal product Thorsten Czub makes no claims to impartiality, but raises some interesting points nonetheless... I must confess to being ignorant of Mr. Czub's precise role, but I also noticed his name on the 'Read-Me' file of the new Hiarcs 3.0, thanking him for some translation work.

When should we expect a major breakthrough in [chess computer] science? When will a lone developer 'step through the looking-glass'? Who will this developer be?

The answer to the above two questions is, of course, whenever the old, classical programmers say "we've reached perfection, there is no way to improve"; when the old paradigm says 'there is only one way'; when all the developers produce roughly equal results.

This is the situation we have today with chess programs. The classical paradigm is represented by Fritz3: fast and simple evaluation, pre-processing of the position before the search; and all strength, all hopes, in the search - nodes per second and search efficiency are the buzzwords.

For a classical program, to keep the search fast, the evaluation at each node must, of necessity, be brief. This evaluation is usually no more than a weighting given for each piece on each square (for example a knight might be worth 3.3 pawns on centre squares and 2.9 pawns on edge squares) and evaluation of the pawn structure for doubled pawns, passed pawns etc. The classical pre-processing function looks for themes in the position and adjusts the square weightings accordingly - for example, if a knight is attacking a square next to the king, then increase the weighting for all the squares that the queen could co-operate with the knight in making a king attack, increase the knight weighting to keep it on the original square, increase other co-operating piece weightings, and so on.

There is no doubt that this approach works, but it cannot be the way forward. Pre-process ing knowledge becomes more stupid with increasing search depth, as positions deep in the search tree becomes more removed from the assumptions of the original position, the square weighting adjustments become more irrelevant (why weight the squares for the queen after the cooperating knight has been removed from the board?- but the classical paradigm doesn't understand that !). I call this type of search Artificial Stupidity (AS).

Since all the current programs operate in this way, ELO grading lists and inter-program tournaments are no more than a reflection of the partially-sighted playing the blind, whose AS algorithm is most efficient, but it is not chess. They don't even know that they don't know.

Classic programs have static knowledge only, dynamic knowledge is beyond the fast and simple evaluation function.

Statics:
- Material
- Structure
- Chronic weaknesses
- ...and more

Dynamics:
- Lead in development
- More active piece placement

- A specific and cooperative concentration of pieces in a certain sector of the board
- ...and more

Static features tend to be stable, they remain with time. Dynamic features can be dissipated with time. Static features are easy to calculate, classical programs include them. Dynamic features are difficult to calculate, they rely on interaction between the pieces, 'looking-glass' programs will begin to include them. And it is the lack of the difficult dynamic feature calculation that marks the classical programs with so many bad games and bad moves - the types of games that allow GM's to laugh at chess pro grams.

As GM John Nunn says, 'the top programs occasionally win games against grandmasters, but they habitually lose games against ordinary club players, often making the most appalling anti-positional moves in the process.' What else can one expect ? The old classical program finds a 24 move deep check thread, gets to the end of the thread, finds it is not yet mate, and all it can do is add up the material, evaluate the pawn structure and return a score that shows absolutely no concept of the position ! To play chess without knowledge of chess is not to play chess, strong players will always beat such programs with superior knowledge. The classical program play chess as if it were the First World War in the trenches, no concept of mobility, no concept of co-operation of forces, no concept of knocking the enemy off balance with well timed blows; just material and pawn structure - if it plays boring chess, that's why - if it blunders against club players, that's why. It understands nothing of consequence.

The philosophers of classical search claim that search finds everything and knows everything - they give as an example the knight fork: Without search the program knows that it is good to capture the queen with the knight. With three ply the search knows that it is good to knight fork the king and the queen. With five ply the search knows it is good to play the knight to a position where it can threaten a fork and so on.

But the point must surely be that the search only has this knowledge within the tree. At the leaf nodes it has no such knowledge. An intelligent program can calculate as part of its evaluation function whether a knight fork is available; thus the intelligent program has this knowledge distributed evenly over the entire search tree. In this way intelligence can replace search.

It is important here to distinguish between combinational knowledge and dynamic knowledge. In our example of the knight fork above, the classical program only has this 'knowledge' if the situation arises in tactics - the classical program only generates this knowledge as part of a combination to win the queen. If this win of the queen does not emerge from the search, then the knowledge does not exist!

The situation is perhaps clearer (and more serious) in the case of a king attack. If the classical program can find mate or win of material by some line attacking the king, in such case it has knowledge of the king attack; but if, at the search horizon, it has a strong attack, but not yet any material won, or king mated, it does not know this is a good line!

The 'looking-glass' program can calculate the attack strength *from its evaluation function.* So, without actually finding mate or material win, the looking-glass program has the dynamic knowledge of the attack.

The classical program has combinational knowledge only by resolution of material within the search horizon. The looking-glass program has dynamic knowledge from its evaluation function. The looking-glass program is a planner, the classical program is a finder. The looking-glass program is pro-active, it makes plans to exploit the position; the classical program is re-active, it waits for a mistake by its opponent and then exploits it.

Overall the impression is of a static, non-risk taking, hostile, World War I environment. The new paradigm will come from an unexpected quarter. From a developer with extrovert personality, accustomed to taking risks, a developer with chess knowledge.

'Search' is the lazy programmer's way to avoid evaluating a position. The new paradigm differs from the classical by one simple conceptual switch.

The classical paradigm makes fast and simple evaluation at each node and generates intelligence from the search tree. The classical programmer looks for ways to make his search more efficient and his evaluation function simpler and faster. The 'looking-glass' paradigm makes slow and complex evaluations at each node and prefers to prune the search tree by use of this evaluation function. In this model, search is to be avoided unless absolutely necessary. Thus the search tree is not central to the new paradigm, rather the search tree is used to find details overlooked, or mistakes made, by the evaluation function. The 'looking-glass' paradigm has the components of human thought - detailed, intuitive evaluation, with search carried out to ensure that the program is not falling into any traps. I estimate that the difference in nodes per second between an extreme classical program and a 'looking-glass' program will be of the order of 20-30 times, sufficient to give the classical program an extra two plies of search (albeit with reduced knowledge at the nodes). Thus the increased knowledge of the'looking-glass' program has to compensate for this apparently reduced search depth. The looking-glass strategy necessitates much programming effort, and requires the programmer to have an exceptionally good knowledge of chess strategy and tactics. When such a program is first being developed it will constantly be outplayed by classical programs, for classical programs see everything within their horizon and the newly developing 'looking-glass' program cannot yet hope to know sufficient tactical and positional themes to compete, but our experience shows that once breakthrough (a knowledge of sufficient chess themes to compensate for reduced search depth) occurs, the looking-glass program begins to consistently outplay the classical programs. Further advantages emerge from the high level of chess knowledge in the evaluation function - better move selection and move sorting, resulting in more efficient search - more possibilities of accurate forward pruning, resulting in smaller search trees. With increases in tree size (from faster hardware), these advantages are geometric.

B-Search or A-B-Search? - NO! Evaluation based or search based!

The classicists maintain the computer chess dichotomy of B-search (which I understand means pruning occurs at all levels of the tree) or A-B Search (which apparently means that part of the search is full width).

The looking-glass programmer condemns this dichotomy as meaningless.

The new paradigm makes the issue clear: chess programs either have simple evaluation and generate intelligence through search, or have complex evaluations and use limited search as a backup to cover oversights and mistakes. All chess programs prune in one way or another, but looking-glass programs, with complex evaluation, are able to prune more.

Of course, the issue is not so black and white. There is a grey scale between the extreme looking-glass (human play style) and extreme classical style. At the classical end of the scale the B or A-B dichotomy tries to position the program on the scale, but basically classicists believe in search. At the looking-glass end of the scale the issue is how much does the evaluation function allow us to prune or extend - how many risks can we take based on our evaluation function ? Basically looking-glass programmers believe in evaluation.

If, as is said, chess is war, then there must be lessons to be learnt from military history. I have already alluded to the static, boring First World War style of the classical programs . The opposite style can be found in several histories; Rommel in North Africa, Alexander the Great against Darius, Von Mansteinin Russia. Alexander, despite being outnumbered many times, concentrated the powerful mobile part of his army, attacked the stronger Persians, cut through and went straight for Darius himself. The bulk of Darius's army was not engaged, but the battle was decisively won - a classic king attack. Von Manstein (and Rommel) both understood that the power of the outnumbered German army lay in superior staff work, concentration of forces, striking blows to knock the enemy off balance. The looking-glass chess program must contain knowledge of these dynamic elements; and it is only the looking-glass program that has the knowledge and evaluation time available to calculate such ephemerals.

To find a chess player who understood the king attack, the concentration of forces, the striking of blows to unbalance the opponent, one need look no further than Michael Tal, Russian grandmaster, and player of such romantic and swashbuckling style that his games continue to thrill all lovers of chess. For the developers of the Complete Chess System 2 it was an emotional, and unexpected, experience to find their program playing, sacrificing, in the style of Tal. We were almost able to guarantee exciting games against all our opponents.

When Selective Search conducted a questionnaire of its readers some time ago, one of the most oft-repeated requests was for articles on programming techniques, hence the inclusion of the above piece. Our thanks to Calvin Hutt of Oxford Softworks for sending us this article, which appears here in considerably edited form. No facts and figures on actual results have been edited however (there were none in the original), and S/S has no review copy of CCS2 in order to make our own assessment of its strengths and weaknesses. If we ever do, we will pass on our views. Several game scores were included, but no counterbalancing losses or win ratios against its opponents, so we decided it would be a little unfair to publish any of them.

I must admit that before reading this article, I was not aware of the angst that apparently besets the world of chess computer programming, although I suppose that feelings will always run high in any field where creative pride and business considerations meet head on. As mentioned in the preface, Thorsten Czub and Mark Uniacke of Hiarcs are evidently known to each other, but whether they hold any views in common I have absolutely no idea. All I can say with confidence is that the new Hiarcs 3.0 plays the most striking and distinctive chess of any PC program I have seen to date.

READER'S GAME

A New S/S contributor - one with a Pentium 90Mhz PC! - sends in an entertaining game played on the previous version of Hiarcs. Hopefully, ***Francis Monkman*** *will be soon be reporting on the new Hiarcs and Genius programs*

1 am. 27/9/94; just played my first game with Hiarcs. I can (modestly, you understand) report that it 'awarded' me an ELO rating of 3165 (...!) for this effort, which, if nothing else, could spawn a new theory of 'digital humour'. Much of it actually follows the computer's 'expected line' (so if you subtract Hiarcs' estimated ELO of 2450, White isn't actually left with much), but in fairness, his 22nd, 23rd and particularly 24th moves 'pump' the situation in a way that is thoroughly human.

□ Francis Monckton (turbo-charged)
■ Black: HIARCS 2.1 (Solid)
Pentium 90Mhz 30 secs. a move

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1 e4 e5 2 ♘f3 ♘c6 3 ♗b5 a6 4 ♗a4 ♘f6 5 O-O ♗e7 6 ♖e1 b5 7 ♗b3 d6 8 c3 O-O 9 h3 ♘b8 10 d4 ♘8d7 11 ♘1d2 ♗b7 12 ♗c2 ♖e8 13 ♘f1 ♗f8 14 d5

...Usually, White waits for ... c5 before playing this move.

14...c6 15 dxc6 ♗xc6 16 ♘g3 ♘c5 17 ♕e2 ♖c8 18 ♗g5 ♗e7

Genius 2.0 prefers an immediate ... h6.

19 ♕e3 ♕d7

And here, Genius wanted ...♕c7.

20 ♘h4 h6 21 ♗xf6 ♗xf6 22 ♘4f5 ♗g5 23 ♕f3 g6

At this point, White manages to connect two brain cells and enthuse them with an idea. He realizes that, at this precise moment, one knight on f5 is worth two almost anywhere else. And the 'back-up' knight will itself 'exact penance' of three pawns.

24 ♖ad1! gxf5 25 ♘xf5 ♖e6 26 h4 ♗d8 27 ♘xd6 ♖b8 28 ♘f5 ♕e8 29 ♕h5 ♕f8 30 b4 ♘a4

This knight seems 'out of court', despite the attack on c3. Perhaps ... ♘d7 (ChessMaster 4000) or ... ♘b7 (Genius 2) is better.

31 ♗b3 ♖f6 32 ♗xf7+

CM and Genius both wanted 32 ♖d6, leading, in the opinion of the former, to 32 ...♔h7 33 ♖xf6 ♗xf6 34 ♗xf7 ♗g7 35 ♕g6+ ♔h8 36 ♘xh6 37 ♕xc6 ♗xh6; the latter has 32 ... ♖xd6 33 ♘xd6 ♗e8 34 34 ♘xe8 ♕xe8 35 ♕g6+! I think CM4000's auto-annotate ran out of time (max 120 secs/move).

32 ...♕xf7

Here 32...♔h7 is definitely better (Genius), with many lines leading to a draw. *(For space reasons, much of the analysis has unfortunately had to go - Ed.)*

33 ♘xh6+ ♖xh6 34 ♕xh6 ♗f6?

Slightly better is ... ♗b6 (CM)

35 ♖e3 ♗b736 ♖d6 ♗g7 37 ♖g6 ♖f8

Better is ♗xe4, leading to 38 ♖xe4 ♖b6 39 ♖4g4 ♖xg6 40 ♕xg6 ♘xc3 41 ♕c2 ♘xa2 42 f3?! according to CM.

38 ♖3g3 ♕xf2+ 39 ♔h2 ♕xg3+ 40 ♖xg3 ♖f7 41 ♕e6 ♔f8 42 h5 ♗xe4 43 h6 ♗h8 44 ♕c8+ ♔e7 45 ♕xh8 ♔d7

...and Black resigned.

On the subject of the CM4000, Francis comments: "It is very strong, if somewhat dour. The display I find unpleasant, and the waiting intolerable. Does a chess program really need to access the hard disk when you pick up a piece? And again when you put it down?"

MAN versus MACHINE

Two tournaments to report on this time, the first from Canberra, Australia. This was an all-play-all between teams of five in the two camps.

Humans

1. IM Guy West	2410 Elo	4pts
2. IM Matthias Roeder	2430 Elo	3 pts
3. FM Tim Reilly	2355 Elo	2 pts
4. - Roger Farrell	2099 Elo	2½ pts
5. Brian Butler	1748 Elo	½ pt

Computers

1. Lachex	2200 Elo	1½ pts
2. Mephisto Genius 2.0	2345 Elo	4½ pts
3. M-Chess Pro	2305 Elo	3 pts
4. Hiarcs 2.0	2217 Elo	3 pts
5. Desperado	2000 Elo	1 pt

Unfortunately, the report we have does not say what PC was used for the games, or on what basis the computer grades shown above were made. Report, annotation, and comments: acknowledgements to ACE News (Australian Chess Enterprises), issue 5.

Sicilian
□ **Mephisto Genius 2.0**
■ **IM Matthias Roeder**
ANU Challenge, 1994

1 e4 c5 2 ♘f3 d6 3 d4 cxd4 4 ♘xd4 ♘f6 5 ♘c3 a6 6 ♗e2 e5 7 ♘b3 ♗e7 8 0-0 0-0 9 ♗e3 ♗e6 10 ♕d2 ♘bd7 11 a4 ♖c8 12 a5 ♕c7 13 ♖fd1 ♘c5 14 ♘xc5 dxc5

At Bad Worishofen in 1993, Jansa played 15 ♗f3 against Roeder. Genius decides on a more aggresive approach (was it prepared?!)

15 ♘d5!? ♗xd5 16 exd5 ♘e4 17 ♕d3 f5?

18 d6!!

After this move, the weaknesses of Black's position become very apparent, especially the squares d5-e6.

18... ♘xd6

Both 18...♕xd6? 19 ♕c4+ and 18...♗xd6? 19 f3 allow White to win material.

19 ♕d5+ ♘f7 20 ♕e6 ♖cd8 21 ♖xd8 ♗xd8 22 ♕xf5 ♕e7 23 ♗d3 g6 24 ♕e4 ♔g7 25 ♕d5 ♗c7 26 ♗xc5 ♗d6 27 ♗b6 ♘g5 28 ♗c4 ♗b8? 29 ♗c5 1-0.

However, the games were not all wins by the computers. Some of the programs were simply outclassed by the strong human players. However, the final result gave the computer team a one-point win.

This was an unexpected result, but the quick time limit (each player had 30 minutes each) and the tactical play by the humans gave the computers a favourable advantage. The match again proved to be a very close and exciting encounter which brought about some interesting chess.

Our second, and major, Man v Machine report is on the Fifth Harvard Cup, the annual event that pitches some of the best US players against some of the best PC programs around. Our thanks to HCC Associates and The Computer Museum, Boston, for providing us with the following report:

For the first time ever, a computer has outscored all the humans in the prestigious Harvard Cup Intel Challenge. The software was run on 90Mhz Intel Pentium systems. WChess, created by programmer Dave Kittinger of Mobile, Alabama, scored an undefeated four wins and two draws out of six games for an overall performance of 83½%.

Among the grandmasters, 1993 Harvard Cup winner Joel Benjamin, 30, of New York, successfully defended his championship, scoring 6½ points against his silicon rivals, for a total performance of 81.25%.

"Not only did a computer make top score this year, but also the performance of all the programs improved significantly over 1993," said Larry Kaufman, editor of *Computer Chess Reports*. The final tally was Humans 29½ - Technology 18½, or 38½% overall for the machines, as compared with only 25% last year.

Games were played at the rate of 25 minutes for each player.

(Editor's note: The percentage figures above apparently take into account a weighting for colour advantage, which for this event was estimated at 120 USCF points for White.

The fact is that Benjamin (6½), Gulko (6), and Yermolinsky (5½) all scored more than WChess, which led the computers on 5 points and a 2895 USCF performance. CM4000 and Socrates made 2½, Hiarcs and MCP had 2 points, Rebel 6.0,1½, and Zarkov-X ended with one point).

London System
□ **GM Boris Gulko**
■ **M-Chess Pro 3.85x**

1 d4 ♘f6 2 ♗f4 e6 3 e3 b6 4 ♘d2 d5 5 ♘gf3 ♗d6 6 ♘e5 0-0 7 ♗d3 ♗a6 8 c4 dxc4 9 ♘dxc4 ♗b4+ 10 ♔f1 ♘d5 11 ♗g3 b5 12 ♘d2 c5 13 dxc5 f6 14 ♕h5 ♘xe3+ 15 fxe3 fxe5+ 16 ♔e2 g6 17 ♕xe5 ♕c8 18 ♘e4 ♘c6 19 ♕g5 ♔g7 20 ♖hf1 ♖f5 21 ♖xf5 exf5 22 ♕f6+ ♔g8 23 ♗c2 1-0.

Reti
□ **GM Boris Gulko**
■ **Hiarcs Master 3.0**

1 ♘f3 d5 2 g3 ♘f6 3 ♗g2 c6 4 d3 ♗g4 5 0-0 ♘bd7 6 c3 6 ♘c3 e5 7 e4 ♗b4 8 exd5 cxd5 9 h3 ♗xf3 10 ♕xf3 ♗xc3 11 bxc3 ♖c8 12 c4 0-0 13 cxd5 ♖xc2 14 ♕d1 ♕c7 15 d6 ♕c3 16 ♖b1 b6 17 ♖b3 ♕c8 18 ♗b2 ♖c5 19 d4 exd4 20 ♗xd4 ♖a5 21 ♖c3 ♕d8 22 ♕d2 ♘d5 23 ♖d3 ♘5f6 24 ♗c3 ♖f5 25 g4 ♖c5 26 ♖e1 h5 27 g5 ♘h7 28 h4 ♖c4 29 ♖d4 ♖c5 30 ♖de4 ♕c8 31 ♗a1 ♖d8 32 ♕d4 f6 33 ♖e7 ♔h8 34 ♕e4 ♖c1 35 ♕g6 ♖xe1+ 36 ♖xe1 ♘df8 37 ♕xh5 ♖xd6 38 g6 ♖e6 39 ♖d1 ♕e8 40 ♗d5 ♖e1+ 41 ♖xe1 ♕xe1+ 42 ♔g2 ♕xa1 43 gxh7 ♕b1 44 ♔h3 g6 45 ♕f3 ♘xh7 46 ♗b3 ♕f1+ 47 ♔h2 ♔g7 48 ♕e3 ♕a1 49 ♕e7+ ♔h6 50 ♕e3+ g5 51 hxg5+ ♘xg5 52 f4 ♕b2+ 53 ♔g1 ♕b1+ 54 ♔h2 ♘e4 55 ♕h3+ ♔g6 56 ♕g4+ ♔h6 57 ♕h4+ ♔g7 58 ♕g4+ ♔h6 59 ♕h4+ ½-½.

Sicilian
□ **WChess**
■ **GMPatrick Wolff**

1 e4 c5 2 ♘f3 d6 3 d4 cxd4 4 ♘xd4 ♘f6 5 ♘c3 a6 6 ♗g5 e6 7 f4 ♘bd7 8 ♕f3 ♕c7 9

0-0-0 b5 10 ♗xb5 axb5 11 ♘dxb5 ♕b8 12 e5 ♖a5 13 exf6 gxf6 14 ♗h6 ♗xh6 15 ♘xd6+ ♔e7 16 ♔b1 ♖d8 17 ♕e4 f5 18 ♕d4 ♖g8 19 ♘xc8+ ♕xc8 20 ♕b4+ ♕c5 21 ♖xd7+ ♔xd7 22 ♕b7+ ♔e8 23 ♕b8+ ♔e7 24 ♕xg8 ♗xf4 25 ♖d1 ♕c7 26 h3 ♗e5 27 ♘e2 ♗f6 28 c3 ♖b5 29 ♘d4 ♖b6 30 g4 fxg4 31 hxg4 h6 32 ♕a8 ♗e5 33 ♔a1 ♕b7 34 ♘c6+ 1-0.

Centre Game
□ GM Alex Shabalov
■ Socrates 4.0

1 e4 e5 2 d4 exd4 3 ♕xd4 ♘c6 4 ♕e3 ♘f6 5 ♘c3 ♗b4 6 ♗d2 0-0 7 0-0-0 ♖e8 8 ♕g3 ♖xe4 9 a3 ♖g4 10 ♕e3 ♗a5 11 f3 ♖g6 12 h4 ♗b6 13 ♕e1 d6 14 h5 ♘xh5 15 ♖xh5 ♗xg1 16 ♗d3 ♗c5 17 ♕h1 h6 18 ♘e4 ♗b6 19 ♔b1 ♘e5 20 ♗xh6 gxh6 21 ♖xh6 ♖xh6 22 ♕xh6 ♘g6 23 ♗c4 ♗f5 24 ♖h1 ♕e7 25 g4 ♗e6 26 ♗d3 ♗d4 27 ♘g5 ♗g7 28 ♕h7+ ♔f8 29 ♖h5 ♗d7 30 ♗xg6 ♕f6 0-1.

Queen's Gambit Accepted
□ GM Alex Yermolinsky
■ WChess

1 d4 d5 2 c4 dxc4 3 ♘f3 ♘f6 4 e3 ♗g4 5 ♗xc4 e6 6 ♕b3 ♗xf3 7 gxf3 ♘bd7 8 ♘c3 ♘b6 9 ♗e2 ♗e7 10 ♗d2 0-0 11 0-0-0 c5 12 dxc5 ♗xc5 13 ♔b1 ♕c7 14 ♘e4 ♘xe4 15 fxe4 ♖fd8 16 ♗c3 ♖xd1+ 17 ♗xd1 ♖d8 18 h4 ♗e7 19 h5 ♘c4 20 ♕c2 ♗f6! 21 ♗xf6 gxf6 22 ♔a1 ♖d2 23 ♕c3 ♖xf2 24 ♗b3 b5 25 ♖g1+ ♔h8 26 ♕b4 ♕d8 27 ~~♕xb5 ♘xb2 28 h6 ♕c8 29 ♔b1 a6 30~~ ♕b6 ♘d3 31 ♕d4 ♘e5 32 ♖d1 ♖g2 33 ♕b6 ♖g8 34 ♕d6 ♕a8 35 ♕d4 ♕f8 36 ♖h1 ♖g6 37 ♕b6 ♘f3 38 ♕xa6 ♘d2+ 39 ♔a1 ♕c5 40 ♕d3 ♘xb3+ 41 axb3 ♕a5+ 42 ♔b1 ♖g2 0-1.

Sicilian
□ GM Alex Shabalov
■ Hiarcs Master 3.0

1 e4 c5 2 ♘f3 d6 3 d4 cxd4 4 ♘xd4 ♘f6 5 ♘c3 e6 6 f4 ♘c6 7 ♘f3 ♗e7 8 ♗d3 0-0 9 a3 d5 10 e5 ♘g4 11 ♕e2 f5 12 ♗d2 ♗c5 13 ♖f1 ♘d4 14 ♘xd4 ♗xd4 15 g3 ♗d7 16 h3 ♘h6 17 ♗e3 ♗xc3+ 18 bxc3 ♕a5 19 ♗d4 ♖ac8 20 ♔d2 ♖c7 21 ♖fb1 ♖fc8 22 ♖b4 b6 23 a4 ♗c6 24 ♖g1 ♗e8 25 ♕e3 ♔h8 26 ♔e2 ♘g8 27 ♔f2 ♘e7 28 ♖a1 ♔g8 29 ♔g2 ♘g6 30 ♔h2 h5 31 ♖g1 ♘e7 32 ♖g2 ♘c6 33 g4 hxg4 34 hxg4 ♘xb4 35 cxb4 ♕xb4 36 gxf5 ♗xa4 37 c3 ♕a5 38 fxe6 ♗b5 39 ♗g6 ♗e8 40 ♗xe8 ♖xe8 41 f5 ♕b5 42 ♕h3 ♕c6 43 ♖g6 ♖ee7 44 ♕g2 ♕b7 45 ♕g4 ♖c6 46 ♕h4 ♖cc7 47 ♕h5 ♕c8 48 ♖g3 ♕e8 49 ♕g4 b5 50 ♕h4 ♖xe6 51 fxe6 ♕e7 52 ♕g4 ♖c6 53 ♗e3 ♖xc3 54 ♖f3 ♖c2+ 55 ♔h3 ♖c4 56 ♗d4 ♖c7 57 ♖f7 ♕a3+ 58 ♔h4 ♖xf7 59 exf7+ ♔xf7 60 e6+ ♔e7 61 ♗xg7 ♕e3 62 ♗f8+ ♔xf8 63 ♕f5+ ♔e7 64 ♕f7+ ♔d6 65 ♕d7+ ♔e5 66 e7 ♕f2+ 67 ♔g4 ♕f4+ 68 ♔h3 ♕f3+ 69 ♔h2 ♕e2+ 70 ♔g1 ♕e1+ ½-½.

Slav
□ ChessMaster 4000 Turbo
■ GM Alex Shabalov

1 d4 d5 2 c4 c6 3 e3 ♘f6 4 ♘c3 e6 5 ♘f3 ♘bd7 6 ♗d3 dxc4 7 ♗xc4 b5 8 ♗b3 ♗b7 9 a3 a6 10 0-0 c5 11 ♗c2 ♕b8 12 dxc5 ♗xc5 13 b4 ♗d6 14 ♗b2 ♗xf3 15 gxf3 ♗xh2+ 16 ♔g2 ♗e5 17 ♗d3 ♘d5 18 ♕b3 ♕d8 19 f4 ♗xc3 20 ♗xc3 ♘xc3 21 ♕xc3 ♖c8 22 ♕xg7 ♘f8 23 ♖fd1 ♕d5+ 24 f3 ♔e7 25 ♕xh8 ♘g6 26 ♕xc8 ♘h4+ 27 ♔g3 ♕xf3+ 28 ♔xh4 ♕f2+ 29 ♔g5 h6+ 30 ♔xh6 ♕h4+ 31 ♔g7 ♕g4+ 32 ♔h8 ♕h4+ 33 ♗h7 ♕xh7+ 34 ♔xh7 ♔f6 35 ♕c5 1-0.

Sicilian
□ GM Patrick Wolff
■ M-Chess Pro 3.85x

1 e4 c5 2 ♘f3 e6 3 d4 cxd4 4 ♘xd4 ♘f6 5 ♘c3 ♘c6 6 ♘db5 d6 7 ♗f4 e5 8 ♗g5 a6 9 ♘a3 b5 10 ♘d5 ♗e7 11 ♗xf6 ♗xf6 12 c3 ♗b7 13 ♘c2 ♘b8 14 a4 bxa4 15 ♖xa4 ♘d7 16 ♖b4 ♗xd5 17 ♕xd5 0-0 18 ♗c4 ♘b6 19 ♕d3 a5 20 ♖b5 ♘xc4 21 ♕xc4 ♖b8 22 0-0 ♖xb5 23 ♕xb5 ♕b8 24 ♘a3 ♕xb5 25 ♘xb5 ♖b8 26 c4 g6 27 ♖d1 ♗e7 28 ♔f1 f5 29 f3 fxe4 30 fxe4 ♖c8 31 ♖c1 a4 32 ♔e2 ♗g5 33 ♖c2 ♖c6 34 ♔d3 ♔g7 35 ♖f2 ♗c1 36 ♖c2 ♗g5 37 ♖c3 ♔f6 38 ♖a3 ♗c1 39 ♖a2 ♖a6 40 ♔c2 ♗g5 41 ♘c3 ♔e7 42 ♖xa4 ♖xa4 43 ♘xa4 ♗f4 44 h3 ♔d7 45 b4 ♗e3 46 ♘c3 ♔c6 47 ♘d5 ♗f2 48 ♘f6 h5 49 ♘d5 g5 50 ♘f6 h4 51 ♘d5 ♗d4 52 ♔d3 ♔b7 53 ♔e2 ♔c6 54 ♔f3 ♗b2 55 ♔g4 ♗c1 56 ♔f5 ♔d7 57 ♘f6+ ♔c6 58 ♔e6 ♗e3 59 ♘d5 ♗d4 60 ♔f5 ♗g1 61 ♔xg5 ♗f2 62 ♔f5 ♗d4 63 ♔e6 ♗f2 64 ♘e7+ ♔c7 65 ♘f5 ♗e1 66 b5 ♗b4 67 ♘xh4 1-0.

Alekhine
□ M-Chess Pro 3.85x
■ GM Alex Shabalov

1 e4 ♘f6 2 e5 ♘d5 3 d4 d6 4 c4 ♘b6 5 f4 dxe5 6 fxe5 c5 7 d5 e6 8 ♘c3 exd5 9 cxd5 c4 10 ♘f3 ♗b4 11 ♗xc4 ♗xc3+ 12 bxc3 ♘xc4 13 ♕a4+ ♘d7 14 ♕xc4 ♘b6 15 ♕b5+ ♕d7 16 ♕xd7+ ♗xd7 17 d6 ♖c8 18 ♗d2 ♗b5 19 ♘d4 ♗d3 20 ♔f2 ♔d7 21 ♖he1 ♖he8 22 a4 ♗g6 23 ♖a2 ♖c5 24 ♘f3 ♘c4 25 ♗f4 ♗h5 26 ♖ae2 ♗xf3 27 gxf3 ♖a5 28 ♖g1 g6 29 ♖b1 b6 30 ♖b4 ♘xe5 31 ♖d4 f6 32 ♗c1 ♖c5 33 ♖e3 ♖c4 34 ♖xe5 ♖xd4 35 ♖xe8 ♖xa4 36 ♖f8 f5 37 ♖f6 ♖c4 38 ♗a3 ♖xc3 39 ♖f7+ ♔d8 40 ♖xa7 f4 41 h4 h5 42 ♖a6 ♖b3 43 ♖a8+ ♔d7 44 ♖a7+ ♔d8 45 ♗c1 ♖b4 46 ♖f7 ♔e8 47 d7+ 1-0.

Nimzo-Indian
□ Hiarcs 3.0
■ GM Michael Rohde

1 d4 ♘f6 2 c4 e6 3 ♘c3 ♗b4 4 e3 0-0 5 ♘f3 d5 6 ♗d3 c5 7 0-0 dxc4 8 ♗xc4 ♘bd7 9 a3 cxd4 10 exd4 ♗xc3 11 bxc3 ♕c7 12 ♕e2 b6 13 ♗d2 ♗b7 14 ♗d3 ♖fe8 15 ♖fe1 ♖ad8 16 ♗b5 ♘e4 17 ♘g5 ♘xd2 18 ♕xd2 h6 19 ♘e4 a6 20 ♗xd7 ♕xd7 21 f4 ♕c7 22 a4 ♖c8 23 ♖a3 ♖ed8 24 ♕e3 ♕c6 25 ♕g3 ♔f8 26 a5 b5 27 ♘c5 ♗a8 28 ♖a2 ♔g8 29 ♖b2 ♕c7 30 ♖bb1 ♕xa5 31 ♖a1 ♕c7 32 ♖xa6 b4 33 ♖f1 ♗d5 34 ♖aa1 ♗c4 35 ♖fb1 bxc3 36 ♕xc3 ♕xf4 37 ♖d1 ♗e2 38 ♖e1 ♕xd4+ 39 ♕xd4 ♖xd4 40 ♘xe6 ♖d2 41 ♘d4 ♗g4 42 ♘b3 ♖b2 43 ♘d4 ♖c4 44 ♖a8+ ♔h7 45 ♖d8 ♗c8 46 h3 ♗b7 47 ♖e2 ♖xe2 48 ♘xe2 ♖c2 49 ♖e8 f5 50 ♘f4 ♗e4 51 ♖e7 ♔g8 52 g4 g5 53 gxf5 ♗xf5 54 ♖e5 ♗d7 55 ♘e6 ♔f7 56 ♘xg5+ hxg5 57 ♖xg5 ♗xh3 58 ♖h5 ½-½.

Modern
□ GM Boris Gulko
■ NOW

1 d4 g6 2 e4 c6 3 c4 d5 4 exd5 cxd5 5 ♘c3 dxc4 6 ♗xc4 ♘c6 7 ♘f3 ♗g7 8 d5 ♘e5 9 ♘xe5 ♗xe5 10 ♕e2 ♕d6 11 ♘b5 ♕b4+ 12 ♗d2 ♕xb2 13 0-0 ♗f5 14 ♖fe1 a6 15 ♕xe5 ♕xe5 16 ♖xe5 axb5 17 ♗xb5+ ♗d7 18 ♗c4 h5 19 ♖ae1 b5 20 ♗b3 f6 21 ♖5e2 ♗g4 22 f3 ♗f5 23 ♗b4 ♖a7 24 d6 e5 25 f4 e4 26 ♖c2 ♔d8 27 ♖ec1 ♘h6 28 ♖c7 ♖h7 29 ♖e7 ♖hxe7 30 dxe7+ ♖xe7 31 ♗xe7+ ♔xe7 32 ♖c6 e3 33 ♖c3 ♘g4 34 ♗d1 b4 35 ♖b3 ♗e6 36 ♖xb4 ♘f2 37 ♗b3 ♗f5 38 ♖d4 h4 39 h3 ♗b1 40 ♔f1 ♗d3+ 41 ♔e1 ♗e4 42 ♖xe4+ ♘xe4 43 ♔e2 ♔d6 44 ♔xe3 ♘c5 45 ♔f3 ♘d3 46 ♗c4 ♘b2 47 ♗e2 ♔d5 48 ♗b5 ♘d1 49 a4 ♔c5 50 ♗d3 g5 51 fxg5 fxg5 52 a5 ♘b2 53 ♗e2 ♘a4 54 ♔g4 1-0 (59).

The S/S Rating Guide

For the benefit of new readers, the hieroglyphics on the back cover are explained, whilst regulars may be interested in the news from Ply...

The internationally recognised standard for assessing the strength of chessplayers is called the Elo Rating System, after its inventor Professor Arpad Elo. For UK players, there is also the system operated by the British Chess Federation. Both systems express strength in the form of a score based on results. The Elo figure can be translated into BCF by the formula 'Elo minus 600, divided by 8'. Our back cover has two rating lists, both of which have been built up over many years. The *Selective Search* list (abbreviated to 'S/S') contains games played at 'Game in 60 minutes' or longer, whilst the *Ply* list only has games played at 40 moves in 2 hours, the most frequently used time setting in international tournaments. 'Ply' is the name of a Swedish magazine devoted to chess computers, and their rating list is run as part of an ongoing university project. It is therefore free of commercial considerations of any kind. They kindly allow Selective Search to make use of their data.

Unfortunately Elo points are not identical from one country to the next, so one should add 100 points to the *Ply* figures to arrive at an 'English translation'; i.e. a Swedish player with an Elo of 2259 would be regarded as around 2359 over here. Beware of manufacturer's claims regarding 'USCF' grades. This is the American system, and runs at another 100 points higher than the UK, or 200 points more than *Ply*!

All the computers are ranked in strength order according to the S/S list, which just shows 'name, rank and number' plus the quantity of games on which the grade is based. The *Ply* list shows the Elo rating (without the 'add 100' adjustment mentioned above), the BCF equivalent, the number of games taken into consideration, plus another column marked '+/- Elo'. This indicates the margin of error. For example, a computer graded at 2259 on the basis of 250 games has a margin of error of 59 Elo; i.e. the figure of 2259 might actually be as low as 2200, or as high as 2318; however the median figure is more likely to be correct than those at the extremes. The higher the number of games played, the more reliable the grade, so this 'plus or minus' figure comes down progressively as more and more games are played. Fortunately, the ratings of humans are not subjected to such rigours - your grade is your grade, for a whole year at a time!

To put the figures into context, 1000 Elo (BCF 50) is beginner standard. From here to 1400 (BCF 100) is good hobby player / weak club player territory. 1600 (125) would be regarded as a slightly better than average club player, and 2000 (175 BCF) as a very good one. Anyone over 2200 (BCF 200) is seriously strong by most standards, very likely playing for his county or in the top section of weekend congresses. A 2350 (219 BCF) player might well hold a title (perhaps FIDE Master, abbreviated to FM); a 2400 (BCF 225) player could be an International Master (IM), and 2500 (BCF 237) is Grandmaster (GM) standard. World Champion Garry Kasparov is Elo 2805 at the moment, or 276 BCF - the highest rating of all time.

Rating News From *Ply*

The Berlin Pro is a new entry on the Ply list, making its entrance at 2264. Also new is Kallisto 1.82 at 2247.The Risc 2500 has dropped by 13 Elo points. Ply hope to start measuring Rebel 94, Fritz 3.0, TascBase with the new King program, the Genius 68030, and the Tasc R30. Let's hope they do!

Rank	Computer	S/S BCF	S/S Games	Ply Elo	Ply BCF equiv. Elo	Ply +/-	Ply Games
1	Meph Genius 68030	228	49	-	-	-	-
2	Meph Berlin Pro	225	232	2264	208	50	211
3	Tasc R30 (Active)	225	38	-	-	-	-
4	Meph Lyon 68030	218	374	-	-	-	-
5	Meph Vanc. 68030	216	472	2235	204	37	451
6	Meph Risc 1MB	216	714	2216	202	28	683
7	Meph Port 68030	214	460	-	-	-	-
8	Saitek Ren.Sparc 20	214	471	2215	202	33	471
9	Saitek Risc 2500	210	864	2201	200	25	812
10	Novag Sapph/Diam'd	206	27	-	-	-	-
11	Meph Vanc. 68020/12	204	933	2165	196	25	892
12	Meph Lyon 68020/12	204	2492	-	-	-	-
13	Meph Vanc. 68000	202	835	2103	188	25	816
14	Meph Berlin	202	658	-	-	-	-
15	Meph Port. 68020	200	1713	-	-	-	-
16	Fid Elite 68030 V9	199	379	2121	190	40	372
17	Meph Lyon 68000	197	1325	-	-	-	-
18	Meph Almeria 68020	196	1003	-	-	-	-
19	Meph Port. 68000	193	1478	-	-	-	-
20	Fid Mach 4/Elite V7	193	1396	-	-	-	-
21	Mephisto Nigel Short	191	39	-	-	-	-
22	Saitek Brute Force	188	223	-	-	-	-
23	Fid El. 68000 x2 V5	188	258	-	-	-	-
24	Meph Roma 68020	186	1043	-	-	-	-
25	Meph Polgar 10	186	609	-	-	-	-
26	Novag Diablo/Scorpio	185	951	2007	176	23	928
27	Meph Almeria 68000	184	1025	-	-	-	-
28	Meph Dallas 68020	184	996	-	-	-	-
29	Fid Mach 3 68000 v2	180	2371	1995	170	14	2343
30	Meph Milano	180	811	1961	170	26	740
31	Meph MM5	180	1319	-	-	-	-
32	Meph Polgar 5	179	1615	1972	171	17	1594
33	Meph Dall./Mon.Dall	178	2283	-	-	-	-
34	Nov S.Forte/Exp. 6C	178	2371	-	-	-	-
35	Meph Roma/Montreal	176	2267	-	-	-	-
36	Meph Academy	175	2000	-	-	-	-
37	GK2100/President	175	22				
38	Meph Modena	173	1204	1924	160	22	1020
39	Meph Amsterdam	173	2373	-	-	-	-
40	Nov S.Forte/Exp. 6B	173	1343	-	-	-	-
41	Meph Mega 4	172	2435	-	-	-	-
42	Fid Mach 2B/C 68000	172	2909	-	-	-	-
43	Saitek Gal-Ren D10	172	1209	-	-	-	-
44	T'Mstr./Trompowski	170	505	-	-	-	-
45	Meph S.Mond2/MC4	170	224	-	-	-	-
46	Novag Ruby/Emerald	169	529	1877	160	31	492
47	Meph MM4	169	2866	-	-	-	-
48	Saitek Travel Champ	169	45	-	-	-	-
49	Nov S.Forte /Exp. 6A	168	1155	-	-	-	-
50	Saitek Turbo King II	166	894	1867	-	24	883
51	Meph MonteCarlo	166	262	-	-	-	-
52	Saitek Gal. / Ren. C8	166	313	-	-	-	-
53	CXG Sphinx Galaxy	165	1567	1883	-	18	1558
54	Conchess Ply.Vict.5.5	165	697	-	-	-	-
55	Fid Mach 2A 68000	164	338	-	-	-	-
56	Saitek GK2000	164	558	1902	163	30	553
57	Novag Expert 5/6	161	532	-	-	-	-
58	Fid Club 68000	161	1459	-	-	-	-
59	Novag Jade / Zircon	161	18	-	-	-	-
60	Novag Forte B	159	1917	-	-	-	-
61	Meph Rebell	159	2121	-	-	-	-
62	Fid Avant Garde 5	159	1721	--	--	--	--
63	Fid Par E./Des. 2100	158	2538	-	-	-	-
64	Saitek Stratos /Corona	158	3053	-	-	-	-
65	Novag Forte A	157	2202	-	-	-	-
66	Meph S.Mondial 1	157	1420	-	-	-	-
67	Conchess Plymate 5.5	157	2169	-	-	-	-
68	Saitek Simultano	157	364	-	-	-	-
69	Saitek Gal/Ren.	157	976	-	-	-	-
70	Conchess 6	155	107	-	-	-	-
71	Fid Excellence 4	155	1740	-	-	-	-
72	Novag Expert 4	155	962	-	-	-	-
73	Conchess Plymate 4	153	372	-	-	-	-
74	Saitek Turbo Kasp 4	153	512	-	-	-	-
75	Fid Elite C	152	182	-	-	-	-
76	Mephisto MM2	151	781	-	-	-	-
77	Saitek Gal. / Ren. B4	151	37	-	-	-	-
78	Fid Exc./ Des. 2000	150	1646	-	-	-	-
79	Saitek Prisma / Blitz	149	306	-	-	-	-
80	Conchess 4	148	509	-	-	-	-
81	Novag Super Const.	147	3689	-	-	-	-
82	Novag Super Nova	147	411	-	-	-	-
83	Novag Supremo	144	28	-	-	-	-
84	Meph Europa/M.Polo	143	240	-	-	-	-
85	Novag Super VIP	143	335	-	-	-	-
86	Fid Prestige / Elite A	142	856	-	-	-	-
87	Fid Sensory 12	141	1340	-	-	-	-
88	Saitek Superstar 36K	139	997	-	-	-	-
89	Conchess 2	139	1096	-	-	-	-
90	Novag Const. 3.6	137	825	-	-	-	-
91	Novag Quattro	137	585	-	-	-	-
92	Novag Primo / VIP	137	354	-	-	-	-
93	Meph Mondial 2	136	31	-	-	-	-
94	Fid Elite B / Original	133	236	-	-	-	-
95	Meph Mondial 1	131	247	-	-	-	-
96	Novag Const. 2.0	130	1289	-	-	-	-
97	CXG S.Ent/Adv.Star	128	922	-	-	-	-
98	CXG 3000	123	17	-	-	-	-
99	Fid Sensory 9	121	1114	-	-	-	-
100	Saitek Ast/Conq/Cavl	121	61	-	-	-	-
	PC Programs						
1	Mephisto Genius 2 (486/50-66)	-	-	2346	220	39	369
2	ChessMachine 30Mhz (King 2.0, aggressive)	-	-	2320	216	29	733
3	ChessMaster 4000(486/50)	-	-	2314	215	42	345
4	ChessMachine 30Mhz (Schroeder 3.1)	-	-	2312	211	35	476
5	M-C Pro 3.5 486/50-66	-	-	2302	210	39	365
6	Chess Genius 1 (486/50-66)	-	-	2291	210	41	358
7	Meph. Gideon Pro (486/50-66)	-	-	2289	201	38	372
8	ChessMachine 30Mhz (Schroeder 3.0)	-	-	2279	200	62	168
9	M-Chess Pro 3.12 (486/50-66)	-	-	2276	199	37	427
10	Chess Genius 1 (486/33)	-	-	2264	195	50	211
11	Kallisto 1.82 (486/50-66)	-	-	2247	194	55	177
12	M-Chess Pro 3.12 (486/33)	-	-	2245	191	55	179
13	Hiarcs Master 2.0 (486/33)	-	-	2213	186	48	215
14	C-Machine 16Mhz (Schroder, ARM2)	-	-	2200	179	29	619
15	M Chess 1.1-1.71 (on 486/33)	-	-	2195	178	44	326
16	CM The King 512k	-	-	2184	176	35	413