Selective Search

August / September 1993
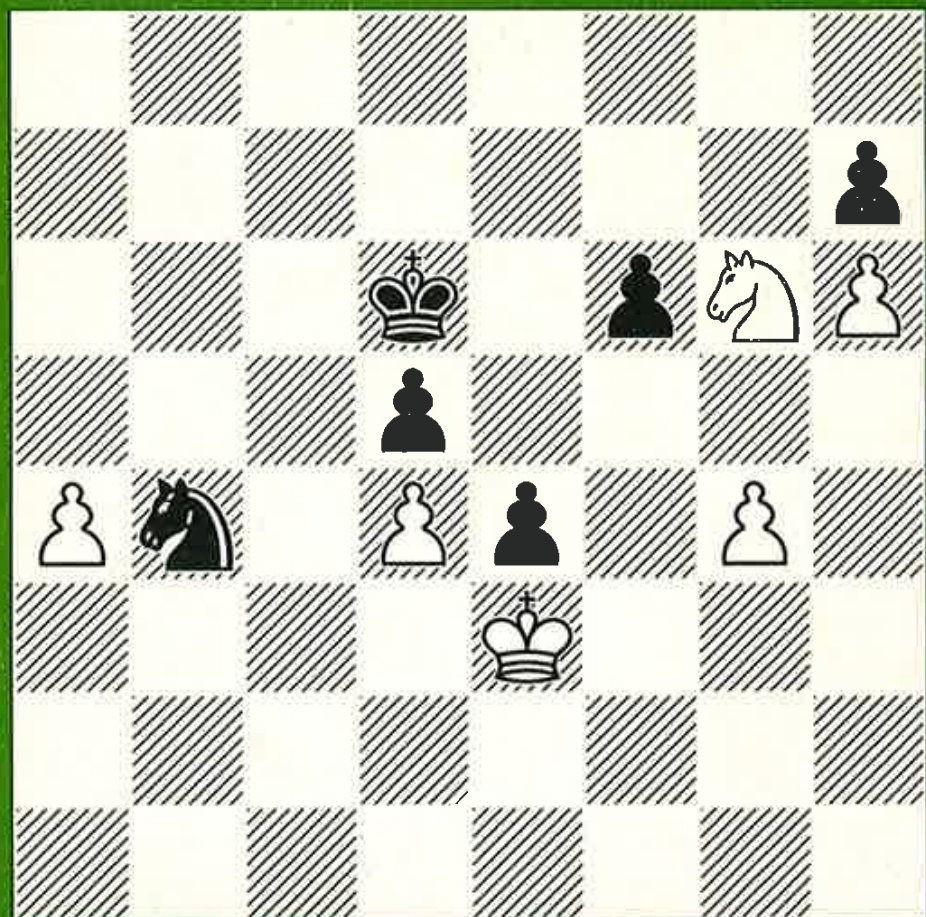
*Mickey Adams' Chess Genius helps
out at the Biel Interzonal...*

£2.00

Issue 047

Contents

New Product Review:
The Tasc R30

Progress, in chess computers as in any other field, is reckoned to be a combination of small tweaks and evolutionary development, interspersed with the occasional 'great leap forward'. If that is so, the new R30 from Tasc sits securely in the second category.

Only last issue S/S reported on what readers would like in an ideal, money-no-object chess computer in the year 2000. After a couple of weeks of testing the R30, we are starting to think it has already arrived.

When the first rumours of the R30 went around, it was thought the price was going to be at or near £2,000, so of course we were expecting something pretty good. Even so, when we took the first one out of its box, we were genuinely taken aback by the sheer class of the thing.

Whatever else people may or may not think about the R30, surely no-one is going to deny that this is the best-looking chess computer ever made. No buttons, knobs, or bug-eyed LCDs popping out at you, just a beautifully made tournament size chess board in inlaid wood, put together to a higher standard than any of us can remember seeing before. Only when you peer at it closely do you notice the 81 tiny LEDs, one on the corner of each square. The board is less than an inch high

The R30 is the first CC to have an operating unit entirely separate from the board.

(!), making it only half as thick as Saitek's Renaissance, Mephisto's Munchen and Exclusive, or Novag's Diablo.

As the German magazine Schach & Spiele pointed out in their extremely positive and enthusiastic review, this makes it possible, even in a normal sitting position, to play just as you would in a tournament - no lifting of the elbow on every move! Apparently the R30 has won a design award in Germany for the quality of its woodworking, and we can well believe it.

Next out of the wrapping comes the operating console; an object 8"x 6" which wouldn't look out of place in the dashboard of a Jaguar, being cased in what looks to me like walnut or burr. The 'feel' of the solitary eight buttons that do everything, is also in the luxury car class. In the centre of this is the actual display panel in green. At 5" x 1.5", (or "truly gigantic" as Schach & Spiele describe it) this makes it at least six times bigger than the display of any other CC. It therefore comes as no surprise that this makes everything six times easier to follow, and that it can display about six times more information simultaneously!

Link it all up though, and the fun really begins. Up come the analogue (clockface) clocks on the right and left of the screen (which remain on view throughout all the following options), with a big space in between that shows: a) Best move found so far; b) Evaluation; c) Depth of search, brute force and selective; d) time on current move; e) Move under consideration at

that instant; f) ranking of currently considered move on the move list and total number of possible moves; g) Node Counter (how many positions analysed, which increases by 3-6,000 per second). Or, if you prefer, one toggle of the four cursor keys then takes you to: Brute and Selective search depth; Evaluation; the expected line of play ahead - generally 8-10 half-moves deep. Another press and the last seven moves of the game appear. One more scroll-through and the screen shows a complete chessboard in miniature, showing the position of all the pieces in figurines.

All the while, the clocks show the minute-hand and hour-hand, and also a digital countdown of the seconds in that minute - very useful for Blitz! Press the 'Enter' key at any time though, and the R30 gives the current/last move time and total time for both sides in digital form instead, while to the right and left of this, you can have any two of the above options displaying simultaneously - complete flexibility in other words; quite unique, quite superb.

Because the screen is so big, operating the menu system is absurdly easy as the main menu, the sub-menu, and the selections within it, all show at one and the same time. This allows one to verify everything, or change anything, in a few seconds flat. Indeed, the manual that comes with the R30, good though it is, is hardly necessary (although, like all such translations into English, it is a highly entertaining read...). For example, just pressing 'Menu' and scrolling down to 'Settings' is enough to show you that its default settings are: Strength - Expert, Style - Normal, Easy - Off, Hash - On, Search - Selective, Book - Random. The same goes for all the other Main Menu categories of 'Play', 'Game', 'System', 'Board', and 'Special'.

Actually playing on the R30 is the next totally new experience. Never, ever, have I been forced to drop a piece down from a great height to make a move register, nor take the move back and do it again, nor had arguments with blinking lights that don't want to go out. Put the piece down even on the outer limits of the square, and still your move will be accepted. You can chop pieces off in any way you choose, and generally need make no concessions to your normal style of play. Put simply, the R30 seems more like a magic chess-board than a chess computer.

There is not even the sound of reed switches switching, and if flashing lights have always irritated you, you can turn them off completely, and read the R30's moves from the screen instead. Otherwise, the computer shows its choice by lighting up the LCDs for all four corners of both the 'from' and 'to' squares, with the result that one need never again peer into a forest of back-rank wood to see what piece is being trundled out to vex you. In case you think we are being overly enthusiastic, perhaps we should quote Schach & Spiele again:- "This design does not spoil the optical impression with 'deep holes' in the squares, and it allows one to see at least three LEDs from fairly every angle... Playing on the board does indeed turn out to be a real pleasure. Swiftly and clearly

The electronic coils that contain the piece-recognition wizardry are hidden below the felt of the pieces

moves are recognized - even when the piece is not placed accurately or when the move was made very fast."

This 'magical' quality is even more in evidence when you want to use the R30 for analysis (usually the game you've just lost to it). Using the on-screen chessboard, you just scroll back and forth around the game, with no need to move the pieces on the board unless you want to. This is because the 'Board' menu allows you to make the display module (which is also the 'brain' of the R30) temporarily independent of the playing surface. Find out what the R30 would have done, and what its assessment is, and then move on to another key moment of the game at will.

Setting up positions has traditionally been one of the most tiresome parts of operating a chess computer. The cumbersome process of pressing Piece Keys, getting it wrong, then finally getting the position right but a piece colour mixed up or the wrong side to move... This is something we have all done, and I am sure I am not alone in hardly ever bothering to try

This position is known to theory and was reached from book by the R30 (white) and Saitek 2500 by move 17. Just twelve moves later, the Saitek had to resign.

because of it. This is a pity, because it tends to reduce a computer to the role of an opponent only, rather than a tutor as well; if you had bought an International Master of infinite patience, it would make sense to get him to actively improve your chess, and the same goes for a computer! For my own part, I can truthfully say that I have learned more about the game (or at least, been more interested and involved) in the past few weeks than in the last few years, as the R30 positively invites experiments, what-ifs, and back-tracks, as well as book study generally.

Setting up a position on the R30 requires you to put the pieces where you want them on the board. That's it. Underneath the felted base of every piece is an electronic circuit that tells the computer whether it is a white knight, a black pawn, and so on. 'Analysis' mode provides instant line-ahead and evaluation which goes progressively deeper the longer you leave it, a la the '2Play' mode of some Mephistos. The key difference is that with piece recognition, you no longer have to 'sequence' back and forth - whenever you change the position, in whatever way, the R30 will instantly start analysing whatever you have set up.

Apart from its obvious benefits in ordinary use, this Piece Recognition System is a boon to tournament organisers, since given a PC and the necessary software, games can be relayed direct to screens or TVs either in the tournament hall, or anywhere in the world. The R30 has already been used in this way at the Melody Amber event in Monaco, and the Walzer tournament in Vienna.

The technical specifications of the R30 are impressive, being those of the top-line ChessMachine. This means a 32 Bit ARM 2 Risc processor running at 30Mhz, giving a performance of 24 MIPS (Million Instructions Per Second) no wait states. Memory is 512Kb static RAM (20ns),

with 256Kb ROM and 128Kb with battery back-up. The opening book contains an oceanic 200,000 moves (not the paltry 55,000 moves indicated in the manual!). It will shortly be possible to link up the R30 to a PC if desired, extending the flexibility still further although precise details are not available yet. Under the 'System' menu, the R30 describes itself, saying that it uses (The King program) 2.2 by Johan de Koning dated 23rd April '93.

So, that only leaves the chess. After all, and to bend a phrase from Dr Tarrasch, 'it is not enough to be a good chess computer, it must also play well.' Fortunately, the R30 plays rather well indeed, and goes straight to the top of the class in our Dedicated list, just as its ChessMachine cousin heads the PC programs.

Time has precluded a full ten-game Head-to-Head at a 40 moves in 2 hours timescale. In fact I have only played nine games eligible for the S/S rating list (minimum of whole game in 60 minutes), the results being: v. Mephisto Risc 1Mb; +2, -1, =1: v. Saitek 2500; 1½/½: v. Berlin 1½/½. Adding a draw v. the Vancouver 32 gives the R30 a temporary grading of BCF 227 (!); too high yes, but even so, it is safe to say that it's rating will settle down to break the 220 barrier in the S/S list, and that therefore the R30 will become the first CC that can be considered true International Master class.

The games so far have been the most exciting series of computer v computer clashes I have seen. In the first game played the Risc 1Mb played quite superbly to inflict the R30's only defeat so far, but in the very next encounter the R30 chiselled out the following fine win:

□ Mephisto Risc 1Mb
■ Tasc R30 (on 'Defensive' style)

1 e4 c5 2 ♘f3 ♘c6 3 d4 cxd4 4 ♘xd4 e5 5 ♘b5 a6 6 ♘d6+ ♗xd6 7 ♕xd6 ♕f6 8 ♕a3

♘ge7 9 ♘c3 ♖b8 10 ♗e3 b5 11 ♘d5 ♘xd5 12 exd5 b4 13 ♕b3 ♘e7 14 c4 ♕g6 15 f3 0-0 16 a3 ♘f5 17 ♗c5 d6 18 ♗f2 ♘d4 19 ♗xd4 exd4 20 axb4 ♖e8+ 21 ♔f2

♕g5 22 b5 axb5 23 cxb5 ♗f5 24 ♔g1 d3 25 h3 ♕e3+ 26 ♔h2 ♕f4+ 27 g3 ♕d2+ 28 ♔g1 ♖bc8 29 ♕d1 ♕e3+ 30 ♔h2 ♖c2+ 31 ♗g2 ♖e2 32 ♕g1 ♕xf3 33 ♖f1 ♕h5 34 ♖f2 ♗xh3 35 ♗xh3 d2 36 ♖g2 ♖xg2+ 37 ♕xg2 ♖e2 38 ♕xe2 ♕xe2+ 0-1.

Against both the Berlin and the Saitek 2500 the R30 drew with black after very hard-fought games. With white though, the Tasc produced the following annihilating attacks, in each case ripping the kingside bare before mugging a defenceless king with its queen. In the Saitek game, both machines played from book to move 17. Just twelve moves later the 2500 had to resign. The Berlin game was also effectively over before move 30!

□ Tasc R30 (Active)
■ Saitek 2500 (Active)

1 ♘f3 ♘f6 2 d4 d5 3 c4 c6 4 ♘c3 dxc4 5 a4 ♗f5 6 e3 e6 7 ♗xc4 ♗b4 8 0-0 0-0 9 ♘h4 ♗g4 10 f3 ♘d5 11 fxg4 ♕xh4 12 ♕f3 ♘d7 13 ♗d2 h5 14 gxh5 ♘e5 15 dxe5 ♕xc4 16 h6 ♗xc3 Here both computers ran out of book. 17 bxc3 f5 18 exf6 ♘xf6 19 hxg7 ♔xg7 20 ♖ab1 ♘d7

21 ♕g3+ ♔h8 22 e4 b5 23 ♕h3+ ♔g8 24 ♕g4+ ♔h8 25 ♗e3 bxa4 26 ♕h5+ ♔g8 27 ♕g6+ ♔h8 28 ♖fd1 ♘e5 29 ♕h5+ 1-0

☐ **Tasc R30 (Active)**
■ **Mephisto Berlin**

1 e4 e5 2 ♘f3 f5?! The Latvian Gambit - not perhaps the wisest choice against the R30, but to be fair, all the computers were permanently set to Random Book. 3 ♘xe5 ♕f6 4 d4 d6 5 ♘c4 fxe4 6 ♘e3 ♘c6 7 d5 ♘e5 8 ♗e2 ♕f7 9 ♘d2 ♘f6 10 c4 ♗e7 11 0-0 0-0 12 f4 (12 f3 is book, so the Berlin had to look out for itself from here on). 12...exf3 13 ♘xf3 ♕g6 14 ♘h4 ♕e8 15 ♘hf5 ♗d7 16 ♕d4 ♔h8 17 ♗d2 ♘g8 18 ♘xe7 ♕xe7 19 ♖xf8 ♕xf8 20 ♖f1 ♕e8 21 c5 ♕g6 22 ♕b4 b6 23 c6 ♗c8 24 ♕h4 ♘f6 Both computers acknowledged that White has a slight edge here, but the next move is a Howitzer...
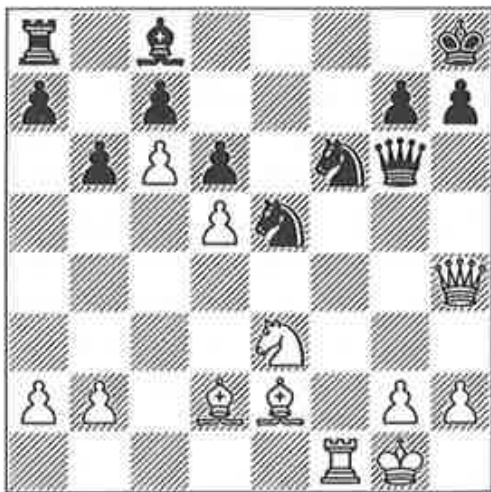
25 ♗h5! ♕d3 26 ♖xf6! gxf6 27 ♕xf6+ ♔g8 28 ♕d8+ ♔g7 29 ♕g5+ ♔f8 30 ♗c3 ♕b1+ 31 ♔f2 h6 32 ♕d8+ ♔g7 33 ♕xc7+ ♔g8 34 ♕d8+ ♔h7 35 ♕e7+ ♔h8 36 ♕xd6 and mate in 7: (36...♕e4 37 ♗xe5+ ♕xe5 38 ♕xe5+ ♔h7 39 ♕e7+ ♔g8 40 ♕f7+ ♔h8 41 ♗g6) 1-0

Given that nothing is ever perfect, what faults can we pick in this extraordinary chess computer? Genuine failings number zero so far, leaving only quibbles. Even here, my own shortlist only ran to three, and has now got shorter still, since Tasc have quashed one of them!

Firstly, I thought that the pieces, although simple and attractive, should be leaded. Since my moves themselves generally carry very little weight, at least I like my pieces to do so as a substitute. But like every chess computer set ever made, the bits lack a heavy metal backbone. However to my chagrin, Tasc have informed us that in fact the disc-shaped coils that do the piece-recognising can be fitted into any wooden pieces - your own favourite set perhaps, or even the £90 triple-weighted, felted and varnished ebony and boxwood set I have long had my eye on at the BCM Chess Shop...

Quibble No. 2 is that the clocks cannot be set to one time allowance for the owner and another for the R30, and it is a shame they did not pinch this excellent and unique ability from the Saitek 2500. It is also a pity they did not carry over the 2500's feature of naming the opening being played. However, the name and quantity of the playing styles available (Active, Defensive, Normal, Solid, and Offensive) have all been borrowed from this other De Koning product, as have the strength settings (Expert, Strong, Moderate, and Novice).

The third and last improvement I can think of would be for the R30 to retain all the evaluations, so that they could be displayed alongside the moves when replaying the game. This would give an excellent reference as to what key positions you should look at in the post-mortem.

Given the long recession, it is not surprising that manufacturers have, in the main, been concentrating on producing mass-market models in the past few years.

All the more refreshing then, to have something exotic to report on now. The R30 has certainly lived up to all the promises Tasc were making before its arrival. In most areas, owning 'the best' is open to argument. Is a Cartier watch 'better' than a Rolex? Is a Porsche better than a Mercedes? Comparing cake with cheese in this way is pointless, but at least in our sphere of interest the answer is now unequivocal - the R30 is clearly the best chess computer available, and by quite some considerable margin.

Given that the main competitive fight between the makes will generally take place much further down the ladder, the R30 is, in our view, likely to remain 'the best' for the forseeable future. What makes it so different from other machines that have, in their day, been the best one could buy lies in kind, not degree. In other words, other machines have been 'the best' because they were slightly stronger than the computer it deposed, or because as well as this, they offered some interesting new feature.

With the R30 though, only the first part applies; it is a few points stronger than any rival in the normal, developmental way. It is in the sheer pleasure it gives to own and use that the R30 breaks completely new ground.

A fiver change from £1,500 is not cheap, but although this may sound silly at first, when you take into account what it offers, it is actually very, very good value. If you are serious about your chess, and are fortunate enough to be able to afford it, you have a treat in store...

Simon Knight

Postscript 3/8/93: We have got used to chess computers being rather good at five-minute games, but even so, it was quite a spectacle to watch three top-flight grandmasters, all members of the English Olympic team, have a go at the R30 yesterday. Their comments during play were mostly unprintable, but the result is not: 5½ out of 6. On the basis of these games at least, that would give the R30 a Blitz rating of BCF 292...!

The Reverse Turk

Computer skullduggery in this year's World Open...

There can be few followers of the game who have not heard about 'The Turk', the chess-playing automaton of the last century, which in fact relied on a concealed (and extremely uncomfortable) player to make its moves via a labyrinthine assortment of cogs and levers. Wheels turn of course, and this year's World Open in Philadelphia was host to the reverse phenomenon - a chess-playing machine masquerading as a human being.

The story is taken up by the Icelandic Grandmaster Helgi Olafsson, who in one round was disconcerted to face an opponent who came to the board adorned with headphones. Worse still, this 'John von Neumann', as he billed himself, seemed to lack in the social graces somewhat, being prone to incessant fidgeting, jumping up and down, and to making strange hand movements all over his body. Still, you don't get to be a grandmaster without taking the odd pecadillo in your stride, so Olafsson settled down to play. However it soon became apparent that his opponent's abilities were on a par with his manners; "I was convinced I was playing a complete patzer" said an aggrieved Olafsson afterwards "He would take anything up to 20 minutes on an obvious recapture..." One can only imagine how devasted the Icelandic GM was when he had to concede a draw by perpetual check after some inaccurate play in the opening.

Nor was this 'von Neumann's' only scalp. Indeed he ended up with a potential prize of $800 as one of the best unrated players in the event. However, in this case crime (or is it merely ingenuity?) did not pay, as the organiser refused to cough up without some kind of identification, which the mysterious stranger refused to proffer. This 'John' also declined the offer of solving a simple chess problem, and when he was asked what opening he had just played, replied "I think it was a Sicilian, or maybe even a Ruy Lopez..."

So, the question is, what concealed (and possibly uncomfortable?) computer was operating the arms of Mr von Neumann all the while? We only have the following game on which to make our deductions... Von Neumann is white, Olafsson black.

1 e4 c5 2 ♘f3 d6 3 d4 cxd4 4 ♘xd4 ♘f6 5 ♘c3 a6 6 ♗g5 e6 7 f4 b5 8 e5 dxe5 9 fxe5 ♕c7 10 exf6 ♕e5+ 11 ♘de2 ♕xg5 12 ♘e4 ♕h4+ 13 ♘2g3 gxf6 14 ♕d4 ♔e7 15 ♕c5+ ♔d8 16 ♕b6+ ♔e8 17 ♕d4 ♔e7 18 ♕c5+ ♔d8 19 ♕b6+ ♔e8 20 ♕d4 ♔e7 21 ♕c5+

One can forgive this gentleman a great deal for the subtlety with which he chose his 'nom de piece' as it were. The real John von Neumann was a brilliant quantum physicist and mathematician, but one who at times could also be rather dim. This fits perfectly with the image of a chess-illiterate nonetheless causing problems for grandmasters.

There is for example the apparently true story about von Neumann, in which he was set the following puzzle. If two cyclists, 20 miles apart, set off toward each other, while a fly buzzes from the nose of one and then back to the nose of the other, how far will it have gone before it is squashed between the two noses? (with the cyclists going at 10mph each, and the fly at 25mph). "Hmm.. interesting" said von Neumann, who then proceeded to work it out in series, visualising the fly flying and the cyclists cycling until the final, sticky moment. By getting it right, entirely in his head and after only a few minutes, he achieved one of the more miraculous (if pointless) feats of the human mind. It was then tactfully pointed out to him that all he needed to have done was work out that the cyclists would have covered the ground between them in an hour, the fly had been flying all this time, and must therefore have travelled 25 miles. "Ah, yes" said von Neumann "that would indeed have been a simpler way..."

Did the imposter have this kind of irony in mind? We shall never know. The story would be perfect had 'von Neumann' simply vanished from the scene and never tried to claim his prize. Unfortunately though, this is a 20th century story... Still, at least he never got his money! *SK*

Emerald Versus Modena: 2 Games

In S/S 046 we reviewed the latest challenger to Mephisto's supremacy in the £150 range, Novag's Emerald. Our conclusion was that while the Emerald has much to commend it, overall the Modena remains the best buy in this sector. It does, after all, share much of the pedigree and class of its more expensive Laptop relations, the Milano and Berlin. These three together undoubtedly comprise the most formidable and complete range of chess computers ever produced.

We promised some games from the match (won by the Modena 6/4), and here they are. Timings were 2 minutes average per move.

Notes by John Wareing of the *BCM Chess Shop*.

□ **Novag Emerald**
■ **Mephisto Modena**

---

1 d4 f5 2 h3 The Emerald opts for an anti-Dutch line that suits its sharp tactical style. 2...♞f6 3 g4 fxg4 4 hxg4 ♞xg4 5 ♕d3 g6 6 ♖xh7 ♖xh7 7 ♕xg6+ ♖f7 8 ♕xg4 d5 9 ♕h5 ♕d7 10 ♗h3 e6 11 ♞f3 ♞c6 12 c3! Instead of the playing the obvious 12 ♞g5, the Emerald snuffs out Black's counterplay. 12...♗e7 13 ♗g4! This fine move highlights the difficulty of Black's position (i.e. White threatens ♕g6 followed by ♗h5). It should be noted here that the Modena hasn't actually done anything wrong, yet it now stands slightly worse. 13...♕d6 14 ♕g6 e5 15 ♗h5 ♕xg6 16 ♗xg6 exd4 17 ♗xf7+ ♔xf7 18 ♞xd4 ♞xd4 19 cxd4 ♗f6 20 ♞c3 c6 (*see diagram*). 21 e3?? A sad move which shows a complete lack of understanding of the position. In order to maintain the initiative

White should activate its pieces (i.e. ♗e3, ♔d2 and ♖g1 or ♖h1). Observe now how Black takes advantage of the freedom bestowed upon its pieces, and White simply collapses. 21...♗g4 22 ♔f1 After the more logical f4 Black is still ahead. 23 ♔f2 22...♔e6 23 ♔g2 ♖g8 24 ♗d2 ♗e2+ 25 ♔h3 ♗f3 26 ♗e1 ♔f5 27 ♖b1 ♗e7 28 ♞xd5 ♗xd5 29 f3 ♗xf3 0-1

□ **Mephisto Modena**
■ **Novag Emerald**

---

1 c4 c5 2 ♞f3 ♞f6 3 d4 cxd4 4 ♞xd4 e6 5 ♞c3 ♗b4 6 ♗d2 0-0 7 a3 ♗c5 8 ♞b3 ♗e7 9 e4 d6 10 ♗d3 ♞c6 11 0-0 ♞e5 12 ♗e2 ♕c7 13 ♞d4 13...♞xc4?? This tactical blunder loses. The Emerald's position, while cramped, was solid and such a speculative outburst was uneccessary. A more restrained approach would have been 13...a6 14 b3 b6 15 f4 ♞ed7 16 f5 ♞c5. 14 ♞cb5 ♕c5! 15 b4 ♕b6 16 ♗xc4 a6 17 ♗e3! axb5 18 ♞xe6 ♕a6 If 18...♕c6 19 ♗d5 ♞xd5 20 exd5 ♕c3 21 ♞xf8. 19 ♞c7 ♕c6 20 ♗xf7+ ♖xf7 21 ♞xa8 ♕xe4 22 ♖e1 ♕g6 23 ♞b6 ♗g4 24 f3 ♗h3 25 ♕e2 ♗d8 26 ♖ad1 ♖e7 27 ♖xd6 ♗c7 28 ♖xf6 gxf6 29 ♞d5 ♖g7 30 ♞xc7 ♗xg2 31 ♕a2+ ♔h8 32 ♗g5! This move ends Black's resistance. 32...♖xc7 33 ♗xf6+ ♕xf6 34 ♖e8+ ♔g7 35 ♕g8+ ♔h6 36 ♖e6 ♕g6 37 ♖xg6+ 1-0

Kings Head '93

The Kings Head in Moscow Road off Queensway, is London's famous chess pub, the only place in town where one is more or less guaranteed a game on most evenings of the week.

The Kings Head also lends its name to two tournaments a year; one a quickplay event, while the other, held in early June, is played to time controls of 45 in 90, followed by 15 minutes for the rest of the game. Grandmaster Mickey Adams won the 5-round event, only dropping a half-point to fellow GM Mark Hebden.

Amongst the field of around 120 were experimental versions of the Hiarcs and Chess Genius PC programs, operated by their respective developers Mark Uniacke and Richard Lang. Final scores were +2, -0, =3 for Genius, and +3, -2, =0 for Hiarcs. Drawn games have not been included.

Both these prototypes have doubtless been tweaked significantly since the tournament, but those owning either of these programs may find it interesting to play through these games to see how choices differ from the current commercial versions.

☐ Hiarcs 2.0
■ J P Conlon (aged 12, BCF 164)

1 e4 d5 2 exd5 ♘f6 3 d4 ♘xd5 4 ♘f3 ♗f5 5 ♗d3 ♗xd3 6 ♕xd3 ♘c6 7 0-0 e6 8 c4 ♘f6 9 ♘c3 ♗e7 10 ♗f4 0-0 11 ♖fe1 ♕d7 12 ♖ad1 ♖ad8 13 a3 ♗c5 14 ♘b5 a6 15 ♕e2 ♗b6 16 c5 ♗a5 17 ♘c3 ♗xc3 18 bxc3 ♘d5 19 ♗d2 ♖fe8 20 ♖b1 ♕c8 21 c4 ♘de7 22 ♗c3 ♘f5 23 ♕b2 h5 24 ♖ed1 ♖d7 25 d5 ♖ed8 26 ♕c2 ♘a7 27 ♘g5 ♖e7 28 ♕e2 exd5 29 ♕xh5 ♘h6 30 cxd5 ♕f5 31 ♖xb7 ♘b5 32 ♗b4 f6 33 d6 ♖ee8 34 a4 fxg5 35 axb5 ♘g4 36 ♖f1 ♕e4 37 ♖xc7 1-0

☐ O Lara (BCF 180)
■ Hiarcs 2.0

1 d4 d5 2 c4 e6 3 ♘f3 ♘f6 4 e3 c5 5 ♘c3 ♘c6 6 cxd5 ♘xd5 7 ♗c4 cxd4 8 ♘xd4 ♘xc3 9 bxc3 ♘e5 10 ♗e2 ♗c5 11 0-0 0-0 12 a4 ♗d7 13 ♗a3 ♗xa3 14 ♖xa3 ♕e7 15 ♕b3 ♘c6 16 ♘xc6 ♗xc6 17 ♗b5 ♕c5 18 ♗xc6 ♕xc6 19 ♖a2 ♖ad8 20 c4 f5 21 h3 ♖d7 22 ♕b5 ♕c7 23 c5 ♖d5 24 ♖c2 ♖fd8 25 g3 e5 26 ♕c4 ♕c6 27 ♖d1 ♔f8 28 ♖xd5 ♖xd5 29 ♔f1 ♖d1+ 30 ♔e2 ♕h1 31 c6 e4 32 ♕c5+ ♔g8 0-1

☐ Mark Hebden (GM, BCF 242)
■ Hiarcs 2.0

1 d4 ♘f6 2 c4 g6 3 ♘c3 ♗g7 4 e4 d6 5 ♗e2 0-0 6 ♗g5 c6 7 ♘f3 ♘a6 8 0-0 h6 9 ♗d2 e5 10 dxe5 dxe5 11 ♕c1 ♔h7 12 ♘xe5 ♘c5 13 ♗f4 ♘fxe4 14 ♘xe4 ♘xe4 15 ♕e3 ♘f6 16 ♖fd1 ♕b6 17 ♕a3 ♘e4 18 ♗e3 ♕c7 19 ♘f3 ♖e8 20 ♖e1 b6 21 ♗d4 ♗f8 22 ♕b3 ♗b7 23 ♖ad1 c5 24 ♗e3 ♗g7 25 ♕c2 ♖e7 26 ♕c1 ♖ae8 27 ♗d3 ♕c6 28 ♗c2 ♕f6 29 ♗a4 ♖c8 30 ♖e2 ♕f5 31 ♗f4 ♗c6 32 ♗xc6 ♖xc6 33 ♖d5 ♕c8 34 ♘e5 ♘f6 35 ♖d8 ♕f5 36 ♕e1 ♖ce6 37 ♗g3 ♘h5 38 ♗h4 g5 39 ♗g3 ♘xg3 40 hxg3 ♖xe5 41 ♖xe5 ♕xe5 42 ♕xe5 ♗xe5 43 b3 g4 44 ♔f1 ♗c3 45 f3 ♗e1 1-0

☐ D R Sedgewick (BCF 181)
■ Hiarcs 2.0

1 e4 e5 2 ♗c4 ♘f6 3 d3 c6 4 ♘f3 d5 5 ♗b3 ♗d6 6 ♗g5 dxe4 7 dxe4 h6 8 ♗h4 ♘a6 9 0-0 ♘c5 10 ♘bd2 ♘xb3 11 axb3 ♗e6 12 ♕e2 0-0 13 ♖fd1 ♕e7 14 ♗g3 ♕c7 15 ♘c4 ♗xc4 16 bxc4 ♘h5 17 ♘h4 ♘xg3 18 hxg3 ♗c5 19 c3 ♖fd8 20 ♘f5 ♗e7 21 ♕g4 ♗g5 22 c5 g6 23 ♖xd8+ ♖xd8 24 ♘d6 b6 25 b4 bxc5 26 bxc5 ♗e7 27 ♘f5 ♗f8 28 ♔f1 ♕d7 29 ♘e3 ♕d3+ 30 ♔g1 ♕xc3 31 ♖xa7 ♕e1+ 32 ♔h2 ♕xf2 33 ♘c4 ♕xc5 34 ♖a5 ♕xc4

35 ♖xe5 ♕c1 36 ♖e6 ♖d1 37 ♖xg6+ fxg6 38 ♕xg6+ ♔h8 39 ♕f6+ ♔g7 0-1

□ M Lyell (BCF 194)
■ Hiarcs 2.0

1 e4 e5 2 ♘f3 ♘c6 3 ♗b5 f5 4 ♘c3 fxe4 5 ♘xe4 d5 6 ♘xe5 dxe4 7 ♘xc6 ♕d5 8 c4 ♕d6 9 ♘xa7+ ♗d7 10 ♕h5+ g6 11 ♗xd7+ ♕xd7 12 ♕e5+ ♔f7 13 ♕xh8 ♘f6 14 ♘c6 ♕xc6 15 b3 ♖e8 16 ♗b2 ♗g7 17 ♕xe8+ ♘xe8 18 ♗xg7 ♘xg7 19 0-0 ♕c5 20 ♖fe1 ♕d4 21 ♖ad1 ♘e6 22 ♖e3 ♘f4 23 a3 h5 24 h3 h4 25 a4 ♕f6 26 ♔h1 ♕g5 27 ♖g1 ♕f5 28 ♖f1 g5 29 ♖b1 g4 30 hxg4 ♕xg4 31 ♖g1 ♘e2 32 ♖e1 ♘f4 33 ♖g1 ♘e6 34 d3 exd3 35 ♖xd3 ♘g5 36 ♖e3 ♕f5 37 ♖f1 h3 38 ♔h2 hxg2 39 ♔xg2 ♕g4+ 40 ♖g3 ♕e4+ 41 f3 ♕e3 42 f4 ♕e4+ 43 ♔f2 ♕c2+ 44 ♔g1 ♘e4 45 ♖e3 ♔f6 46 ♖ff3 ♔f5 47 ♔h1 ♘d2 48 ♖f2 ♕d1+ 49 ♔g2 ♘xb3 50 c5 ♔f6 51 c6 b6 52 ♖h3 ♘d4 53 ♖h7 ♘f5 54 ♔h2 ♕g4 55 ♖h3 ♔e6 56 ♖d3 ♔f6 57 ♖h3 ♕d1 58 a5 bxa5 59 ♖a3 a4 60 ♖fa2 1-0 (on move 73).

□ Chess Genius
■ A Harakis (BCF 171)

1 e4 e6 2 d4 d5 3 ♘c3 ♗b4 4 e5 c5 5 ♗d2 ♘e7 6 a3 ♗a5 7 dxc5 ♗c7 8 ♗b5+ ♗d7 9 f4 a6 10 ♗d3 ♗c6 11 ♘f3 ♘d7 12 ♗e3

f6 13 ♘d4 ♘xc5 14 exf6 gxf6 15 0-0 ♕d6 16 ♕h5+ ♔d7 17 ♗xh7 ♖ag8 18 ♕f7 ♖f8 19 ♕g7 ♔c8 20 b4 ♘a4 21 ♘xc6 ♕xc6 22 ♘xa4 ♕e8 23 ♗d4 ♖f7 24 ♕g4 ♖hxh7 25 ♕xe6+ ♔b8 26 ♘c5 ♖fg7 27 ♗xf6 ♕h5 28 h3 ♖g6 29 ♘d7+ ♔a8 30 b5 ♘f5 31 ♖f2 axb5 32 ♘f8 ♕xh3 33 ♘xh7 ♗xf4 34 ♕e8+ ♔a7 35 ♕xg6 ♕h2+ 36 ♔f1 ♘g3+ 37 ♕xg3 ♗xg3 38 ♗d4+ ♔a6 39 ♖f6+ ♔a5 40 ♖f8 ♕h1+ 41 ♗g1 b4 42 ♖d1 1-0

□ N E Fletcher (BCF 174)
■ Chess Genius

1 d4 d5 2 c4 dxc4 3 e4 ♘f6 4 ♘c3 e5 5 ♘f3 exd4 6 ♕xd4 ♕xd4 7 ♘xd4 ♗b4 8 f3 a6 9 ♗xc4 b5 10 ♗e2 c5 11 ♘c2 ♗a5 12 a3 0-0 13 ♗e3 ♘bd7 14 0-0 ♗b7 15 ♖fd1 ♖fe8 16 b4 cxb4 17 axb4 ♗c7 18 ♘d4 ♖ac8 19 ♖ac1 ♗e5 20 ♘a2 ♘f8 21 ♘f5 ♖xc1 22 ♘xc1 ♗c8 23 ♘d6 ♖d8 24 ♘xc8 ♖xc8 25 ♘d3 ♗c3 26 ♔f2 ♘e6 27 ♖c1 ♘d7 28 ♗d2 ♗d4+ 29 ♗e3 ♖xc1 30 ♘xc1 ♗c3 31 ♘a2 ♗e5 32 g3 g5 33 ♗f1 ♗d6 34 ♗h3 ♘e5 35 ♗xe6 fxe6 36 ♔e2 g4 37 fxg4 ♘xg4 38 ♗g1 ♔f7 39 ♔d3 ♘e5+ 40 ♔c3 ♘f3 41 ♗c5 ♗e5+ 42 ♔d3 ♘xh2 43 ♗f2 ♘f1 44 g4 ♘h2 45 g5 ♘f3 46 ♘c1 ♗d6 47 ♗c5 ♗xc5 48 bxc5 ♘xg5 49 ♘b3 ♔e7 50 ♔d4 ♔d7 51 ♔e5 ♔c6 52 ♔f4 ♘f7 53 ♘d4+ ♔xc5 54 ♘xe6+ ♔c4 55 ♘g5 ♘xg5 56 ♔xg5 ♔d4 1-0

Genius does the business at Biel..

Mickey Adams (White), playing in the Interzonal at Biel, went to bed resigned that his marathon game against Dvoirys would end in a draw. The point is that if White does not want to give up his d-pawn - and Mickey didn't - his king is tied to its defence and no progress can be made. However the new English No. 1 (according to the latest BCF ratings) set his newly-acquired Chess Genius running overnight, and its analysis made him realise he could in fact pass up his d-pawn and execute a neat maneouvre with his knight. The rest of the game went:

86 ♘f8 ♘c2+ 87 ♔f4 Nxd4 88 a5 Ke7 89 Nxh7 Ne6+ 90 Ke3 Nc5 91 Ng5! Kf8 92 Kd4 Na6 93 Ne6+ Kg8 94 Kxd5 Nc7+ 95 Kxe4 Nxe6 96 Kf5 Nc5 97 Kxf6 Nd7+ 98 Kf5 Kh7 99 g5 Nc5 100 Kf6 Nd7+ 101 Ke6 1-0
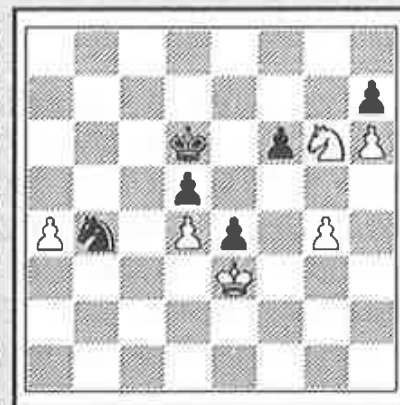
En Passant

Dear Sir,

Thank you for my recent copy of *Selective Search*. I am writing in response to your request for 'human v computer' games.

I've enclosed two, one against the Novag Diablo, and one against my newly-purchased Mephisto Berlin. I must add that I wasn't impressed by the survey results on page 4 of last issue. They've got the playing style of the Berlin as - 3; ha! What nonsense! They must have a different machine to mine; I think it has a brilliant, almost-human style one expects of high master play!

I'm delighted with it; I'm primarily concerned with playing strength in a computer - if it has this, then what more could you want? The stronger the better, and if they do eventually produce one of grandmaster ability then that will be the one for me.

Anyway, back to the games, which were quickplay at 30 minutes each. I hope you find them interesting. I must stress that while I won both of these, I will eventually be sending in some losses as well, but let's start on a good note!

□ **C Miceli**
■ **Novag Diablo**

1 d4 d5 2 ♘f3 c5 3 g3 cxd4 4 ♗g2 ♛a5+ 5 ♗d2 ♛b6 6 c3! ♛xb2 7 cxd4! ♛xa1 8 ♛b3 ♗f5 9 0-0 ♘c6 10 ♘c3 ♘a5 11 ♛b5+ ♗d7 12 ♛xa5 ♛b2 13 ♖b1 ♛c2 14 ♖xb7 ♗c6 15 ♖b1 ♘f6 16 ♖c1 ♛f5 17 ♘e5 ♖c8 18 ♛xa7 ♖a8 19 ♛b6 ♗d7 20 ♘xd5 ♘xd5 21 ♗xd5 ♛f6 22 ♛c7 1-0

The Novag Diablo is one of the strongest and sharpest of the old-style 'greed ma-

chines', but then again, few if any computers would have refused your poisoned b-pawn... If your Berlin game is as good as this one, we'd certainly like to publish it! Unfortunately, you've left a move out somewhere, so do please send in a corrected version. Regarding your comments on the Berlin, you would not be alone in thinking it knows more about chess, and has a more involving playing style, than some of it's objectively-stronger competition. The survey was an aggregate of many opinions. Ed.

Dear Sir,

I am just writing to thank you for the tremendous pleasure that the Berlin you sent last month is giving me. On Blitz Level 6 I am scoring quite a few points off it, so I've now decided I must be an 'inspirational' player, equally capable of blunders and brilliancies! If that is the case, then the following game may be of interest. The computer had a lost game after its seventh (!) move. I don't know the opening - perhaps you could tell me its name *(It's a Pirc. Ed.)*

□ **John Driver**
■ **Mephisto Berlin**

(Notes by John Driver).
1 e4 d6 2 d4 ♘f6 3 ♘c3 g6 4 ♗g5 c6 5 f4 ♛b6 6 b3 ♗g7 7 ♛d2
A logical continuation to f4. I certainly wasn't prepared for...
7...♘xe4? 8 ♘xe4 ♗xd4 9 0-0-0 ♗xg1 10 ♘xd6+ exd6 11 ♛xd6 ♛e3+ 12 ♔b1 ♘d7 13 ♗f6 ♖g8 14 ♗c4 ♗f2 15 ♛c7 ♔f8 16 ♖xd7 ♗xd7 17 ♛xd7 ♖g7 18 ♗xg7+ ♔xg7 19 ♛xf7+ ♔h6 20 g4
The black king is now between a rock and a hard place...
20...♛f3?
Better is ♖h8, I believe, when the forced win is harder to find. More of that anon.
21 g5+ ♔h5 22 ♖f1 h6

It is not easy to see anything better for black.

23 ♗d3 ♚h4 24 gxh6 ♕e3

Acknowledging the error of move 20.

25 h7 ♕d4 26 ♕xg6 ♕xf4 27 ♗e2 ♚h3 28 ♕h5+ ♚g2 29 h8Q ♖xh8 30 ♕xh8 ♕e3 31 ♗d3 a5 32 h4 1-0

..although in fact the game carried on for another nine moves before the king was mated. And now for the 'anon' of move 20. A great deal of my pleasure is to go through the game afterwards with the computer set to '2play' 'Infinite' level, seeing how the Berlin assesses the progress of the game, and how its view differs from my own.

In this mode, the computer later decided that 20...♖h8 was better than the text, and it certainly leads to more active play for Black. I left the machine to analyse the position all night, whereupon it decided that 21 g5 was the best reply, followed by complicated maneouvering that seemed to be leading nowhere.

Dissatisfied with the computer analysis, I prompted it with 21 h4 and then continued playing with white and allowed it 5 minutes a move or so to play for black. There followed:

(20...♖g8 21 h4) 21...♕e4 22 ♖f1 c5 23 ♗d3 ♕f3 24 g5+ ♚h5 25 ♕g7 ♖d8 26 ♕xh7+ ♚g4 27 ♕xg6 ♕xf4 28 ♕e6+ ♚g3 (♚xh4 puts it in a mating net) 29 ♖h1 ♕b4 30 ♗e4 1-0.

The above results from Lawrence Jordan, are especially interesting as all are at the optimum time control of forty in two hours. Some surprises in there too!

Like Lawrence, Frank Holt is also a hard worker in the cause of CC science. This time he's sent in an intriguing series of tests using Leonard Barden's 'How Good is Your Chess' which I have used a couple of times for S/S, to test the Berlin and the Saitek 2500. Abbreviations used are:

C = Centre Control, S = Superior Development, P = Positional Play, A = Attacking Play, D = Art of Defence, B = Combinations, E = Endings. G = Chess Genius on a 486/66 (S=Solid:A=Active, R=Risky). F2=Fritz 2 (on the same PC) M = Mephisto Risc 1Mb, K = ChessMachine The King 15Mhz, C = ChessMachine 15Mhz.

	GS	GA	GR	F2	M	K	C
C	37	42	36	40	42	43	34
S	29	29	26	37	32	29	33
P	28	27	35	21	31	35	33
A	22	25	23	28	28	20	32
D	40	42	39	41	37	40	37
B	28	28	28	25	26	26	26
E	36	36	36	32	39	30	42
Avge.	31	33	32	32	32	32	34

Overall then, not much to choose between them, but with interesting variations in strengths and weaknesses in the different types of game.

Mr Barden geared the tests to a 40/2 timescale, which works out to three minutes a move average (whereby a score of 36 for example, equates to 203 BCF) and not the two minutes a move used for these tests, so it's the *differences* that matter.

PC Corner

*by **Keith Wheeler** this time, who provides the following report on Oxford Software's 'Complete Chess System' PC program, as mentioned last issue.*

The program has just been upgraded to version 1.19E, and improvements to 1.17E include bug-fixes to the copy protection, an additional set of VGA black and white pieces for the 2D board views, and enhancements to the chess engine, giving a claimed improvement of 12 Elo to the program.

The database does not have any dedicated openings classification, but as it is possible to search for particular positions, it would be easy to construct a database of your favourite opening from the 15,000 games supplied. Variations may be nested (a feature not available in Fritz or Fritz 2), and the search mask is more comprehensive than in those two programs.

I have tested Complete Chess on my 386/40 against rated programs and from 11 games it graded at 1973 Elo, although I am still waiting for it to come up with a really convincing victory! My own feeling is that in the long term it will prove to be marginally stronger than the Chess Champion 2175 v.1.06 - the program it replaces. Features being worked on for future issues include SVGA graphics, an on-screen tutorial, and a version for 386 or upward processors that should provide a dramatic increase in program speed.'

□ Hiarcs Standard
■ Complete Chess System

1 e4 c5 2 ♘f3 ♘f6 3 e5 ♘d5 4 ♘c3 e6 5 ♘xd5 exd5 6 d4 d6 7 ♗b5+ ♘c6 8 0-0 ♕b6 9 ♕e2 dxe5 10 ♘xe5 ♗e7 11 dxc5 ♕xc5 12 ♗e3 ♕d6 13 ♗d4 ♔f8 14 ♗xc6 bxc6 15 ♖ae1 c5 16 ♗c3 ♗e6 17 ♗d2 d4

18 ♗f4 ♕d5 19 a3 g5 20 ♗c1 ♔g8 21 f4 gxf4 22 ♖xf4 ♗g5 23 ♖f3 ♗xc1 24 ♖xc1 ♖b8 25 b3 ♕b7 26 ♖g3+ ♔f8 1-0

Next issue: Keith's comments on the PC Hardware table in S/S 046.

Graham White's Tactical Tests

This time around I am giving some tricky pawn endings to solve. My idea was to compare different programs - on different playing styles as well where possible - for speed.

The tests were done on my *Chess Genius* (Active Risky and Solid), *Saitek 2500* (Normal: Active: Offensive: Defensive and Solid), and *M-Chess Pro*. Genius and MCP were on a 486/66 PC, so bear in mind that they were running at about three times the speed of the Saitek.

From these results at least, it would seem that Chess Genius is much the best at endgames.

There is not much to choose between the styles except in the case of No. 1, which may show a slight fault with Solid. M-Chess Pro and the Saitek 2500 seem to be roughly on a par.

Of course, endings other than king and pawn could produce entirely different results - so watch this space!

1. Solution: 1 ♔c5! and wins. E.g. 1...g5 2 b4 g4 3 ♔d4 ♔h5 4 b5 g3 5 ♔e3 ♔h4 6 b6 ♔h3 7 b7 g2 8 ♔f2 ♔h2 9 b8=Q. On CG, Active and Risky find the right move in under twn seconds. Solid, however, takes 55s (?!). MCP takes 1m 40secs., while the 2500 takes about ten seconds on all styles.

2. Solution: 1 a6 f1=Q 2 a7 ♕a1 3 f7 ♕a3 4 d6 ♕f3 5 d5 ♕f7 6 a8=Q ♕g8 7 ♕g8 ♔g8 8 d7. CG solves this in 7 seconds on all styles, MCP finds the win in 3m 15secs., Saitek 2500; 2m 05s (Solid), 2m 18s (Normal), 2m 35s (Defensive), and Active and Offensive both take 2m 50 seconds.

3. Solution: 1 ♔g1! wins in all lines, the basic idea being, for example, 1...h3 2 ♔h2 f3 3 ♔g3 ♔a7 4 b8=Q! ♔xb8 5 a6. Chess Genius: 16secs. (Risky), 18s. (Active), 23s (Solid). MCP: 5 minutes. Saitek 2500: Active is the fastest in 7m 10 secs, Defensive the slowest at 10m 30 secs., while the other three styles all come in at 8m 20 seconds.

4. Solution: 1 ♔d6! e.g. 1...♔a3! 2 ♔c5! ♔a4 3 f4 b5 4 f5 b4 5 ♔c4! b3 6 ♔c3! ♔a3 7 f6 b2 8 f7 b1=Q 9 f8=Q ♔a4 10 ♕a8 ♔b5 11 ♕b7 ♔c5 12 ♕b1. CG finds this remarkably quickly, at under 12 seconds for all styles. MCP is much slower at 6 minutes 40 secs. The Saitek finds 1 ♔d6 soon enough on all styles and thinks it's winning. However, after about a minute it sees black's defence, and cannot see far enough ahead to make out white's win. None of the styles solved this in 8 minutes.
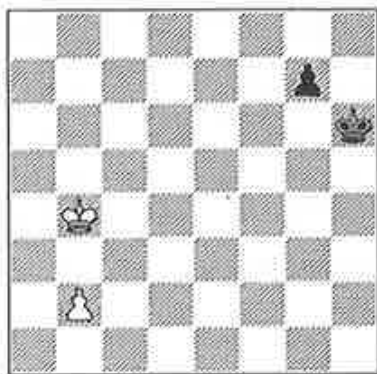
Sheila Jackson Challenges the Berlin

The following games and extracts are quoted (with permission) from a review of the Mephisto Berlin in last December's edition of the *British Chess Magazine*.

It took the form of a 4-game mini-match between the Berlin and English international and WIM Sheila Jackson (Elo 2215, BCF 202).

"The Berlin is one of the leading models of the World Championship-winning Mephisto range of computers. Programmed by Richard Lang, it runs on a 68000 processor and features an opening library of 100,000 half moves. The top Mephistos are reckoned to be the Rolls Royces of the chess computer world, so the clash with Sheila was particularly interesting. They played two 5-minute games and two at 15 minutes, with the Berlin winning both of the first, and one of those at 15 minutes.."

"It quickly became apparent that the computer possessed a sophisticated positional style of play. To some extent this seems out of keeping with the caveman-like openings it sometimes generates, such as the Budapest or the Latvian Counter Gambit...

"All computers perform best against humans at the faster time limits, where speed and tactical considerations increase in importance over long-term strategies. At 15 minutes per player, Sheila definitely had an edge, but at 5 minutes there was no contest; the Berlin won both comfortably.

"It is hard to believe the following game was played at Blitz speed. Black's classic exploitation of the isolated d-pawn is combined with some delicate tactical touches:"

□ S Jackson
■ Mephisto Berlin

(Notes by GM Murray Chandler).
1.e4 c5 2.c3 d5 3.exd5 ♛xd5 4.d4 e6 5.♘f3 ♘f6 6.♗e2 (6. Bd3 is more active, but Be2 is a playable line. The Berlin develops its pieces against the subsequent isolated queen's pawn in textbook fashion) **..♘c6 7.0-0 cxd4 8.cxd4 ♗e7 9.♘c3 ♛d8 10.a3 0-0 11.♗e3 b6 12.♛c2?! ♗b7 13.♖fd1 ♘g4 14.♗f4 ♖c8** Black's piece development has been perfect and White is going nowhere.**15.♛a4 ♘a5 16.♖ac1 ♗d6 17.♗xd6 ♛xd6 18.g3 ♖fd8 19.h3 ♘f6 20.♘b5 ♛b8 21.b4 ♘c6 22.♛b3 a6 23.♘c3 ♛d6 24.♔h2 b5 25.♖d2 ♖d7!** Preparing to double rooks against the isolated pawn. This is a particularly impressive example of the Berlin's strategical understanding, as the rook on c8 (which will shortly move to d8) currently stands well placed on an open file. A more basic program might never have considered redirecting the rook's energies.
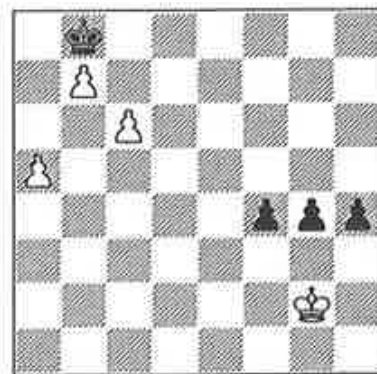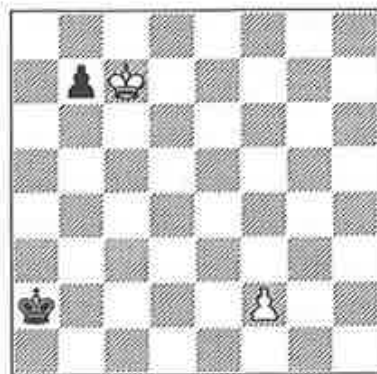**26.♖cd1 ♛c7 27.♖d3 ♖cd8 28.a4 bxa4 29.♘xa4 ♘e4 30.♔g2 a5 31.bxa5 ♘xa5 32.♛b6 ♛c2! 33.♔f1 ♛xa4 34.♘e5 ♘c4 35.♘xc4 ♛xc4 36.♖b3 ♛c7 37.♛xc7 ♖xc7 38.♗f3 ♖c2! 39.♖xb7 ♖xf2+ 40.♔g1 ♖xf3 41.d5 ♖xg3+ 42.♔h2 ♖xh3+ 0-1.** "A superb flowing game by any standards.."

"(The BCM's conclusion is) the Berlin is a fast-thinking opponent, whose positional play is of a consistently high calibre. In 15-minute games, or slower time limits, its official ranking of BCF 208 / 2265 Elo may be an overestimate. However at blitz speed the ranking rises dramatically, perhaps to Elo 2500 or even higher. The quality of the Berlin's 5-minute play is simply stunning, and would challenge opponents of master or grandmaster strength."

How Good Is Your Chess Computer?

An HGYC special this time, both in the quality of the game and of the computers under test - the Tasc R30, the Mephisto Risc 1Mb, and the Saitek 2500!

The three CCs were set to an average of 3 minutes per move. For new readers who do not know the form, the idea is to slide a card down the page, guessing Black's move before actually revealing it. Points are awarded for correct choices, and sometimes for alternatives also. The game comes from The *British Chess Magazine* of January this year, although the notes of this extremely complex battle have been edited down considerably!

Please note that the Mephisto Risc 1Mb is abbreviated to 'Risc' in the text, although of course all three machines use a Reduced Instruction Set Chip.

□ **C Hansen**
■ **V Akopyan**
Groningen 1991

1 c4 e5 2 ♘c3 ♘f6 3 ♘f3 ♘c6 4 g3 g6 5 d4 exd4 6 ♘xd4 ♗g7 7 ♗g2 0-0 8 0-0 ♖e8 9 ♘c2 d6 10 b3 ...
and the test starts now.

10...♗f5 ℬ
3 points, and played by all three. 2 points for 10...g4
11 ♖b1...

11... a5
4 points. Well done to the Risc, the only CC to play this. ♕e7 (R30 and 2500) and ♘e4 both score 2 though.
12 ♖e1 ...

12...♘e4 5
2 points, netted by the R30. The Risc played ♘b4 and the 2500 ♕d7 (no points)..
13 ♘xe4 ♗xe4 14 f3 ♗xc2 15 ♕xc2 ♗d4+ 16 e3...

16...♕g5
"Praiseworthy aggression" apparently, and the choice only of the R30. Worth 3 points, with nothing else scoring.
17 f4 ♕c5 18 ♕f2...

18...♕f5 7
The Risc and 2500 got this right, for 2 points. The R30 played ♗c3 for zero.
19 ♗d2 ♗c5 20 ♖bd1...

20... a4 10
"The only move worthy of consideration" and one up to the 2500 (3 points). The others wanted ♕c2.
21 ♗c3 axb3 22 axb3...

22... ♘b4 14
"The critical point of the game, where an advantage can rapidly disappear unless concrete progress is made..." Only the R30 got the 4 points on offer, recognising the knife-edge position by showing an evaluation of precisely dead level! The others played ♕e6 (zero).
23 ♗xb4 ♗xb4 24 ♖e2...

24... ♖a3 16
2 points. c3, as played by the R30, is too

cautious, and ♖a7 (as per the Risc) is also rather passive. The 2500 took the points however.

25 ♗xb7 ♖xb3 26 ♗c6 ...

26...♖e7 ♙

"3 points, if only for the will-to-win it exemplifies." All three machines got it right. ♖exe3?! winning a pawn but passing up the initiative, is worth 2.

27 ♕f3...

27... ♕c5

No points! Akopyan should have played ♗c5! as did the R30 and Risc. The 2500 chose ♕a5.

28 ♗e4 ♕b6 29 ♖d3 ♗c5 30 ♔g2 ♕b4 31 ♖xb3 ♕xb3 32 ♗d5 ♖xe3 33 ♖xe3 ♗xe3 34 f5 ♕c2+ 35 ♔h1?...

Losing. White needed to play his king to h3, with excellent drawing chances.

35...♕c1+

1 point. All three scored.

36 ♔g2...

36... g5 ♙♙

As played by the Risc for 3 points. Both the others chose ♕g1+.

37 f6...

37...h5 ♙7

"A splendid problem-like move" and worth 5 points, which only the Risc missed out on.

38 ♕xh5 ♕g1+ 39 ♔h3 ♕f1+ 40 ♗g2...

40...♕f5+ ♙♥

As per all three. All the computers knew they were winning by now, and one way or another, can be credited with all the remaining points. This move is worth 3. ♕xc4 merits 2.

41 g4 ♕xf6 42 ♗e4 ♕f1+ 43 ♗g2...

43...♕d3 ♙♥

4 points. 4 points also for ♕xc5.

44 ♗f3...

♗f4

2 points.

45 ♔g2 ♕d2+

Taken for granted by the BCM's annotator, so not worthy of points. However I was a little taken aback when the R30, on playing this move, announced a mate in 13! The other two just played it without showing off of course.

46 ♔h1...

46...♕f2 ♙♥

2 points.

47 ♕h3...

47... ♗e3 ♙♥

2 points, and mate in 2, so it would seem that somewhere Hansen did not put up the best resistance to the R30's mate!

So, of the 51 points available, the R30 (set on 'Active' style) scored 39 for 76.5% of maximum, comfortably inside FIDE master class. Next came the 2500 (on its programmer's preferred choice of 'Agressive') with 34 (66.6%), whilst the Risc's omission on move 37 puts it at 32, or 62.7%. Set at 40 in 2 though, it does find the scoring move, on which basis it would win over the Saitek. You can rate your own computer, or yourself (or preferably both!) on the following scale, with percentages out of 51.

SCORE CHART	
93 - 100%	= Grandmaster
81 - 92%	= International Master
69 - 80%	= FIDE Master
56 - 68%	= Candidate Master
44 - 55%	= Top Regional Player
31 - 42%	= Strong Club Player
19 - 30%	= Average Club Player
0 - 18%	= Casual Player

The usual 'Health Warning' applies; the result of one game is not definitive, but it probably does limit the margin of error

to one category either side of the result achieved. In other words, if for example a real FIDE Master were to sit a dozen of these tests, he would sometimes grade in the IM category if he 'tuned in' to the game particularly well, but sometimes he would slip down to the Candidate Master band. Equally, the R30 could be (and very probably is) an IM having an off-day!

When testing computers in this way over the years, I have found that while CCs do well once the game has been won, they have seldom played the key moves, the speculative and enterprising moves that lead to a position where a winning fight can take place. As you can see, that was far from the case in this game, and it is precisely this that makes the modern breed of top computers infinitely more rewarding to own and play than those of the old generation.

All three computers acquitted themselves extremely well in this exceptionally difficult game ("wonderfully determined and imaginative play" was how the BCM summed it up); between them, you may have noticed, they scored on *every single move...*!   SK

Games from Aegon
notes by John Wareing

□ **Martin Voorn**
■ **Saitek Sparc**
Queen's Catalan by transposition

1 d4 ♘f6 2 c4 e6 3 ♘f3 b6 4 g3 ♗b7 5 ♗g2 ♗e7 6 ♘bd2

This move commits white to fianchettoing his queen's bishop and allows Black to play d5; more flexible is 6 ♘c3.

6...0-0 7 0-0 d5 8 b3 c5 9 cxd5 ♗xd5 10 ♗b2 cxd4 11 ♘xd4 ♗xg2 12 ♔xg2

Now the Saitek is able to capitalize on Voorn's poorly placed king and speedily complete its development.

12...♕d5+ 13 ♘2f3 ♘bd7 14 e3 ♖fd8 15 ♕e2 ♖ac8 16 ♖fd1 ♕e4 17 ♖ac1 ♖xc1 18 ♖xc1 ♘c5 19 ♖c4 a6 20 b4? ♘d3!

There's now no answer to the threat of ...e5; Voorn finds himself ensnared in a tactical trap.

21 ♖c7 ♘d5 22 ♖c2 ♘5xb4 23 ♖d2 e5 24 ♘b3 ♘xa2 25 ♗xe5 ♘xe5 26 ♖xa2 ♘xf3 27 ♕xf3 ♕b1 28 ♕b7 ♕xa2 29 ♕xe7 ♖f8 30 ♘d4 ♕d5+ 31 f3 ♖c8 32 g4 a5 33 ♘f5 ♕d2+ 34 ♔g3 ♕e1+ 35 ♔f4 h6 36 h4 ♖c4+ 37 e4 ♕d2 38 ♔g3 ♖c1 39 ♕e8+ ♔h7 40 g5 ♖g1+ 0-1

□ **Saitek Brute Force**
■ **Max Pam (2206)**
English Opening

1 c4 e5 2 ♘c3 ♘f6 3 ♘f3 ♘c6 4 g3 d5 5 cxd5 ♘xd5

This position is a Sicilian Dragon with colours reversed, with White a tempo up.

6 ♗g2 ♘b6 7 0-0 ♗e7 8 b3

8 d3 with a view to placing the dark squared bishop on e3 would be a more consistent with the dragon.

8...0-0 9 ♗b2 ♗e6 10 ♖c1 f6 11 Ne4 ♕d7 12 ♘c5 ♗xc5 13 ♖xc5 ♖fd8 14 ♕b1 ♗f5?!

Pam now adopts an aggressive but ineffectual bishop sortie; 14...a5 aiming at queenside pressure is a more realisable strategy.

15 d3 ♗h3 16 ♗xh3 ♕xh3 17 ♖fc1 ♖d5 18 a4?!

18 d4 maintains White's edge.

18...♖ad8 19 a5?

This is tactically unsound; either 19 ♕c2 or 19 ♖xc5 are playable.

19...♘xa5 20 ♖xc7 ♘xb3 21 ♖1c3 ♘d4

Black would also be winning after 21...e4!

22 Rxb3 ef 23 Wf1 QxQ 24 KxQ fe+) 22 Nxd4 exd4 23 R3c5 Rxc5 24 Rxc5 We6 25 Rc7 Wd5 26 h4 h6 27 Wc2 Rd6 28 Wd2 Na4?

This lets Brute Force off the hook; 28...Re6 would have been better.

29 Bxd4! Wxd4 30 Wa2+ Wd5 31 a4 Ra6 32 We8+ Kh7 33 Kh2 Ra1 34 f3 b5

White now wastes no time in despatching Pam.

35 We7 Wg8 36 Wxf6 Ra2 37 Wf5+ Kh8 38 We5 Wf8 39 We4 1-0

□ **James van der Wal (2016)**
■ **Mephisto Risc**
Queen's Pawn Opening

---

1 d4 d5 2 c3 Nf6 3 Bg5 Ne4 4 Bh4 Nd7 5 Nd2 Nxd2 6 Wxd2 Nf6 7 Bxf6 exf6 8 e3

White has allowed Black to equalise, avoiding a volatile position and hopefully Mephisto's tactical wrath.

8...Bd6 9 Bd3 0-0 10 Ne2 c6 11 e4 dxe4 12 Bxe4 Wc7 13 Wc2 g6 14 0-0-0
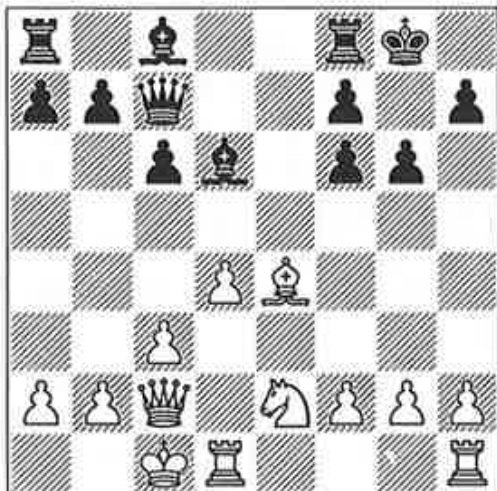
White intends to storm the Black Kingside but Mephisto wastes no time in taking control of the open e-file and disrupting White's crude strategy.

14...f5 15 Bd3 Be6 16 Kb1 Rae8 17 h4 Re7 18 h5 Rfe8 19 f3 b5 20 hxg6 fxg6 21 Nc1 Bd5 22 c4 bxc4 23 Bxc4 Kh8 24 Nb3 Wb6 25 Bxd5 cxd5 26 g4 Bb4?

This drops a pawn.

27 gxf5 Re2 28 Wc1 gxf5 29 Wg5 R2e7 30 Wxf5 We6 31 Wg5

White should now simply exchange queens and go into the endgame a clear pawn up.

31...Rg7 32 Wh5 Wg8 33 Rc1 Bd6 34 Rc6 Rg5 35 Wh6 Rg6 36 Wc1 Bf4! 37 Wc2?

Necessary was 37 Rxg6 and after 37...Wxg6+ 38 Wc2 QxQ 39 KxQ Re2 40 Kb1 Rf2 41 Na5 Rxf3 42 Nc6 Be3 43 Nxa7 Bxd4 44 Nc6 White looks to be surviving.

37...Rg1+ 38 Rxg1 Wxg1+ 39 Nc1 Re1 39...Bxc1 also wins.

40 Rc8+ Kg7 41 Rc7+ Bxc7 42 Wxc7+ Kh6 43 Wf4+ Wg5 44 Wh2+ Kg6 45 Wd6+ Kg7 46 Wc7+ Re7 47 Wc2 Rf7 0-1

□ **Chess Genius**
■ **Harry Parson**
Owen Defence

---

1 c4 b6 2 d4 Bb7 3 d5

3 Nc3 is often seen

3...d6 4 Nc3 e5 5 Nf3 Nf6 6 e4 Be7 7 Be2 Nbd7 8 0-0 a6 9 Be3 0-0 10 h3 c6 11 b4 c5 12 Rb1 Rb8 13 Wc2 h6 14 a4 Ne8 15 Rb2 a5 16 bxc5 dxc5?

Better was 16...bxc5 17 Rfb1 Ba6 18 Rxb8 Nxb8, though White still has a small advantage.

17 Rd1 Nd6 18 Nb5 f6

Black's position is virtually untenable as White has a spacial advantage, a strong passed d-pawn and lots of light squares to aim at on the Kingside.

19 Nh4 Nxb5 20 Rxb5 Bd6 21 Bg4 Ba6 22 Be6+ Kh7 23 We2! We8

If 23...Bxa6 24 Wg4 and now either 24...f5 25 Bxf5 Kg8 26 ab Rb7 28 Bxh6 or 24...g5 25 Wf5+ Kh8 26 Wg6 are both winning for White.

24 Bf5+ Kg8 25 Rb2 Rf7 26 Be6 Nf8 27 Nf5 Nxe6 28 Nxd6 Nd4 29 Bxd4 1-0

The S/S Rating Guide

For the benefit of new readers, the hiero-glyphics 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 on-going 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 257 BCF - the highest rating of all time.

Rating News From Ply

Fifty eight more games have been played with Fritz 2.0 (486/33), but the rating hasn't changed since last list's 2156. When *Ply* started to test Fritz 2, they were not aware that that much larger hash tables could be obtained by inactivating 'himem.sys' and starting with '/x'. Therefore 124 of 260 games have been played with 128Kb hash tables and 136 with2-4Mb. If these games are separated out, Fritz 2 makes ratings of 2142 and 2170 respectively. The difference of 28 Elo points corresponds well to the expected effect of 4-5 doublings of the hash table size. If the 124 games with small hash tables were removed, Fritz 2 would receive 14 more rating points.

Ply have started testing Hiarcs Master 1.0 (486/33), and after 64 games it has a rating of just under 2100. Official Elo after 100 games.

Rank	Computer	BCF	Games	Elo	BCF equiv. Elo	+/- Elo	Games
1	Tasc R30	227	9	.	-	-	-
2	Meph Lyon 68030	218	374	2259	207	59	250
3	Meph Vanc. 68030	216	375	2236	205	38	420
4	Meph Risc 1MB	216	1046	2221	204	31	579
5	Meph Port 68030	214	460	-	-	-	-
6	Saitek Risc 2500	212	486	2218	202	33	507
7	Meph Vanc. 68020/12	205	1481	2160	194	27	726
8	Meph Lyon 68020/12	204	2492	2155	194	23	976
9	Meph Vanc. 68000	203	334	2111	189	28	658
10	Meph Berlin	201	622	2129	192	34	484
11	Meph Port. 68020	200	1713	-	-	-	-
12	Fid Elite 68030 V9	200	599	2127	191	44	324
13	Meph Lyon 68000	197	1325	2106	188	25	830
14	Meph Almeria 68020	196	1003	-	-	-	-
15	Meph Port. 68000	193	1478	-	-	-	-
16	Fid Mach 4/Elite V7	193	1396	2081	185	24	843
17	Saitek Brute Force	188	223	2009	176	47	223
18	Fid El. 68000 x2 V5	188	258	-	-	-	-
19	Meph Roma 68020	186	1043	-	-	-	-
20	Meph Polgar 10	186	609	-	-	-	-
21	Novag Diablo/Scorpio	186	1202	2002	175	25	768
22	Meph Almeria 68000	184	1025	-	-	-	-
23	Meph Dallas 68020	184	996	-	-	-	-
24	Fid Mach 3 68000 v2	181	5009	1996	175	15	2127
25	Meph Milano	180	626	1958	170	28	622
26	Meph MM5	180	1319	1976	172	22	1002
27	Meph Polgar 5	179	2082	1970	171	18	1363
28	Meph Dall./Mon.Dall	178	2283	-	-	-	-
29	Nov S.Forte/Exp. 6C	178	2371	1956	169	19	1326
30	Meph Roma 68000	176	2267	-	-	-	-
31	Meph Academy	175	2000	-	-	-	-
32	Meph Modena	173	174	1883	160	35	399
33	Meph Amsterdam	173	2373	1924	160	22	1020
34	Nov S.Forte/Exp. 6B	1	343	-	-	-	-
35	Meph Mega 4	172		-	-	-	-
36	Fid Mach 2B/C 68000	172	290	-	-	-	-
37	Saitek Gal-Ren D10	172	1209	-	-	-	-
38	Fid Travelmaster	170	505	1903	163	79	123
39	Meph S.Mond2/MC4	170	224	-	-	-	-
40	Novag Ruby/Emerald	170	26	-	-	-	-
41	Meph MM4	169	2866	-	-	-	-
42	Saitek Travel Champ	169	45	-	-	-	-
43	Nov S.Forte /Exp. 6A	168	1155	-	-	-	-
44	Saitek Turbo King II	166	834	1869	159	24	843
45	Meph MonteCarlo	166	262	-	-	-	-
46	Saitek Gal. / Ren. C8	166	313	-	-	-	-
47	CXG Sphinx Galaxy	165	2049	1878	160	19	1382
48	Conchess Ply.Vict.5.5	165	697	1866	158	26	701
49	Fid Mach 2A 68000	164	338	-	-	-	-
50	Saitek GK2000	163	112	1910	164	37	353
51	Novag Expert 5/6	161	532	-	-	-	-
52	Fid Club 68000	161	1459	-	-	-	-
53	Novag Jade / Zircon	161	18	-	-	-	-
54	Novag Forte B	159	1917	-	-	-	-
55	Meph Rebell	159	2121	-	-	-	-
56	Fid Avant Garde 5	159	1721	-	-	-	-
57	Fid Par E./Des. 2100	158	2538	-	-	-	-
58	Saitek Stratos /Corona	158	3053	-	-	-	-
59	Novag Forte A	157	2202	-	-	-	-
60	Meph S.Mondial 1	157	1420	-	-	-	-
61	Conchess Plymate 5.5	157	2169	-	-	-	-
62	Saitek Simultano	157	364	-	-	-	-
63	Saitek Gal./Ren. B6	157	976	-	-	-	-
64	Conchess 6	155	107	-	-	-	-
65	Fid Excellence 4	155	1740	-	-	-	-
66	Novag Expert 4	155	962	-	-	-	-
67	Conchess Plymate 4	153	372	-	-	-	-

Rank	Computer	BCF	Games	Elo	BCF equiv. Elo	+/- Elo	Games
68	Saitek Turbo Kasp 4	153	512	-	-	-	-
69	Fid Elite C	152	182	-	-	-	-
70	Mephisto MM2	151	781	-	-	-	-
71	Saitek Gal. / Ren. B4	151	37	-	-	-	-
72	Fid Exc./ Des. 2000	150	1646	-	-	-	-
73	Saitek Prisma / Blitz	149	306	1736	141	50	202
74	Conchess 4	148	509	-	-	-	-
75	Novag Super Const.	147	3689	1729	141	18	1581
76	Novag Super Nova	147	411	1731	141	38	350
77	Novag Supremo	144	28	-	-	-	-
78	Meph Europa/M.Polo	143	240	1684	135	54	170
79	Novag Super VIP	143	335	-	-	-	-
80	Fid Prestige / Elite A	142	856	-	-	-	-
81	Fid Sensory 12	141	1340	-	-	-	-
82	Saitek Superstar 36K	139	997	-	-	-	-
83	Conchess 2	139	1096	-	-	-	-
84	Novag Const. 3.6	137	825	-	-	-	-
85	Novag Quattro	137	585	-	-	-	-
86	Novag Primo / VIP	137	354	-	-	-	-
87	Meph Mondial 2	136	31	-	-	-	-
88	Fid Elite B / Original	133	236	-	-	-	-
89	Meph Mondial 1	131	247	-	-	-	-
90	Novag Const. 2.0	130	1289	-	-	-	-
91	CXG S.Ent/Adv.Star	128	922	1559	120	39	386
92	CXG 3000	123	17	-	-	-	-
93	Fid Sensory 9	121	1114	-	-	-	-
94	Saitek Ast/Conq/Cavl	121	61	-	-	-	-
95	Nov Mentor16/Amigo	118	22	-	-	-	-
96	GGM + Steinitz	117	287	-	-	-	-
97	CXG 2001	116	84	-	-	-	-
98	Mephisto 3	115	633	-	-	-	-
99	Saitek T'bo/S.Star 24k	115	346	-	-	-	-

PC Programs

	Computer	BCF	Games	Elo	BCF equiv. Elo	+/- Elo	Games
1	ChessMachine 30Mhz (King 2.0, aggressive)	-	-	2319	215	45	306
2	C. Genius 486/50-66	-	-	2302	213	53	231
3	M-C Pro 486/50-66	-	-	2301	213	48	295
4	ChessMachine 30Mhz (Schroeder 3.1)	-	-	2300	212	51	229
5	ChessMachine 16Mhz (Schr. 512k ARM2)	-	-	2217	202	33	528
6	ChessMachine 16Mhz (King 512k ARM2)	-	-	2206	201	42	312
7	M Chess 1.1-1.71 (on 486/33)	-	-	2196	200	43	326
8	Fritz 2 (486/33)	-	-	2156	194	44	260
9	M Chess 1.1 - 1.66 (on 386/25-33)	-	-	2127	191	36	402
10	Rex Chess 2.3 (on 386/25-33)	-	-	2029	179	64	126
11	Fritz 1.0 486/33	-	-	2022	178	63	128
12	Zarkov 2.5 386/25-33	-	-	2018	177	56	168
13	Rex Chess 2.3 (on 386/16-20)	-	-	1928	166	53	174
14	Psion Atari 68000/8	-	-	1880	160	18	1473
15	Chessplayer 2150 (Atari/Amiga)	-	-	1710	139	67	126
16	The Final Chesscard (6502 5Mhz.)	-	-	1697	137	65	149
17	Chessmaster 2100 (Amiga 68000)	-	-	1676	134	85	100
18	Chess Champion 2175 (Atari/Amiga)	-	-	1669	134	62	157