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First Half 1992 Review

by Larry Kaufman, I.M.

Two major man vs. machine contests took place in the spring of '92 -- the Aegon tournament in Holland and the Harvard Cup in New York. The first was a triumph for the Mephisto Vancouver or Berlin program running on a fast 68030 processor, which repeated its predecessor's triumph the previous year and again scored 50% against grandmasters at tournament level. In the Harvard Cup, Heuristic software repeated its victory the previous year with "Socrates" scoring 60% against grandmasters in Action Chess, with Mephisto RISC also doing extremely well at 50%. A third event, in Europe (Regensburg), also deserves mention. The fast (60 MHz) 68030 Mephisto Vancouver won the strong game/one hour tournament with 8.5 out of ten, earning a performance rating around 2700 FIDE (or 2800 USCF!). This must be the greatest computer result in history. The days when it was a surprise for a microcomputer to defeat a grandmaster are clearly past, though no commercial model is really quite up to grandmaster level yet. Progress continues, with most of the credit going to ever faster hardware. A late result just in has Socrates scoring 8½ of 12 at the U.S. Open.

As for new commercial models, there are not so many as in the past due to cancellation or postponement of many planned models. Still, two new Mephisto models rate special mention: the Mephisto RISC, which offers noticeably higher playing strength than the Vancouver 32 bit did for about the same price; and Mephisto Berlin, which brings the terrific Lang program and Mephisto quality into a price range affordable by many (under $500). The other manufacturers have nothing new to offer serious players, though the Fidelity Premiere and Mach III remain excellent values in their respective categories. One new company has entered the fray (Excalibur Electronics) with a model (Legend) that should be the world's strongest table model under $100.

In the pc field, Zarkov has finally released an upgrade (v. 2.60) which seems to be clearly stronger than 2.50 and not too far behind MChess in strength, while MChess plans to release a 32 bit version, M Chess Professional, for 386 and above which should be a clear improvement. As for the programs of Don Dailey and myself, "Alpha" (which we completed the chess-play portion of a year ago) is close to release, while the 32 bit "Socrates" was completed by us in May with Heuristic Software still working on features and graphics. Automated testing puts Socrates and regular MChess too close to call, while "Alpha" is below them and the new Zarkov but above the next tier of programs (Rex, KnightStalker, Psion 2, and Zarkov 2.5). Zarkov has also come out in a mass market format under the name "Grandmaster". Although slightly slower and hence weaker than Zarkov it appears to be the strongest mass market pc program to date.

In late news, I have just learned from our British correspondent Gerald Murphy that two computers played in the British Open, both with disappointing results. The event was 11 rounds, at the standard 3' per move pace. The Mephisto RISC commercial model turned in a performance rating (in U.S. terms) of about 2300, while the Mephisto Vancouver 68020 (12 MHz) with an upgraded program (Berlin program with rook value modified) achieved only 2188. It seems that for whatever reason, in very serious tournaments computers rarely live up to the ratings they earn in more casual events. Human motivation must be the key variable here. Perhaps part of the answer is that in very serious events to which players have travelled far, the only ones who will play computers are those who feel that they know how to beat the machines.

One other bit of recent news is that FIDE has voted to allow computers to play in FIDE events and get official FIDE ratings, with all players in the event required to play the computer if paired. However, FIDE requires that the program pay a registration fee, which I am told is so enormous that hardly any company will deem it worth the price.

I remain available to answer questions at Fidelity on Wednesdays from 10 a.m. to 4 p.m. Eastern time. The toll-free number is 1-800-634-4692.

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THIS ISSUE:

1992 Aegon Tournament

This annual Dutch event is the premier competition between man and machine in the world. This year 24 computers faced 24 human players (including five grandmasters) in a 6 round, 40/2, Swiss system tournament in which all pairings are computer vs human. Most of the world's top computers participated, with the notable exceptions of Deep Thought and Cray Blitz. Among the humans, veteran Grandmaster David Bronstein took first, winning all 6 games. In past years he has lost two or three games to computers at Aegon, but he now claims to have "discovered their weaknesses", and the results bear him out. Next at 5 1/2 were GM Jeroen Piket, GM Rafael Vaganian, and Nico Kuyf, followed by GM John Nunn and others at 5.

The top computer was the Mephisto Vancouver 68030 62 MHz machine, which scored 4 out of 6, including 1 1/2 out of three against Grandmasters. This is the second year in a row that this machine has held the GMs even, and this suggests that when and if Mephisto releases a commercial model with the Lang program on this or comparable hardware (top commercial speed is now 36 MHz) we may be able to buy a silicon grandmaster or close to it. The performance rating in U.S. terms was 2623 (I add 150 to the actual number to adjust from European to U.S. levels. For FIDE ratings the adjustment should be no more than 100, but for Dutch national ratings the adjustment is close to 200, so 150 seems a fair compromise for this event.) Second place at 3 1/2 (2440) went to "Zugzwang", a monster with 256 RISC processors(!). Next at 3 points, in order of performance rating, were Quest 486/33 (2475), HiTech (2472), ChessMachine Schroeder 32 MHz (2466), ChessMachine King 32 MHz (more than twice the commercial 15 MHz speed) (2441), Zarkov 2.6 486/33 (2363), Mephisto Berlin (commercial unit) (2354), Check-Check 486/50 (2252), and Heuristic Alpha 486/33 (by Don Dailey and myself) (2237). The third place finish of "Quest" deserves special mention. Quest is a program by Frans Morsch, who also wrote "KnightStalker" ("Fritz" in Europe). Quest is presumably much stronger than KnightStalker due to the addition of Hash Tables and probably a lot more chess knowledge. It is not commercial at this time.

Next at 2 1/2 were Mephisto Risc (commercial unit) (2412), Mephisto Vancouver 68020 (commercial unit) (2394), Socrates 486/33 (by Don Dailey and myself) (2339), Fidelity Prestige upgraded to Elite v.2 at 20 MHz (2280), MChess 1.32 486/33 (2280), and Mchess 1.71 486/33 (2264). Then at 2 points came Fidelity Elite version 10 68040 (2256), RexChess 486/33 (2223), Novag Scorpio (commercial unit) (2203), L-Chess 486/33 (2198), and Kallisto 486/50 (2004). Novag Diablo (commercial unit) got 1 1/2 (1954), while Nimzo and Dappet on 486/33 brought up the rear with 1 apiece (1997 and 1989). All performance ratings are as given by "Ply" magazine (+150).

Most of the computers performed rather closely with their Swedish "Ply" ratings (Dutch and Swedish ratings are fairly close), making adjustment where necessary for any hardware difference. Of course the Mephisto 68030 was an exception, performing far above its "Ply" rating, even with fifty points or so added for the extra MHz speed. As for the programs Don Dailey and I wrote for Heuristic Software, although Alpha scored half a point more, the stronger Socrates actually performed about a hundred rating points better. It is a pity for all the pc entrants that 486/50 machines were only made available for two of the weaker programs.

As for the human players, although some were only of what we would call Expert or Master strength in the U.S., most of the players were quite familiar with playing against computers. Many had participated in past Aegon events. So the Aegon event is considered to be a severe test for the computers, and ratings from this event tend to be on the low side compared to other events in which the players are more randomly selected. The total score was humans 84, computers 60. If the 586 chip is out in time for next year's event, we should see a very close match if the level of the human players invited remains the same.

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The 1992 Harvard Cup

This year, the Third Harvard Cup was moved from Cambridge to New York in order to be part of the huge Chess Festival. This time, five commercial (or soon to be commercial) chess programs each played a 25' per side game with each of five top notch American Grandmasters (all rated in the 2600s USCF and in the 2500s FIDE). Three of the five programs were pc software running on fast 486 based computers, while the others were Mephisto RISC and Fidelity Premiere (with the Vancouver program) each running on the standard commercial hardware.

The Actual Harvard Cup


The Rogues Gallery of Harvard Cup Drawing lots are (l to r) Michael Rhode, John Fedorowicz, Maxim Dlugy, Sergei Kudrin and Patrick Wolff

As in 1991, the best score for the computers was achieved by the program that Don Dailey and I wrote for Heuristic Software. Last year's entrant was called "Alpha" and it scored 2 out of 4; this year our 32 bit program "Socrates" did even better, scoring 3 out of 5, for a performance rating well into the 2700s USCF or 2600s FIDE! I believe this is the first time any program has achieved a plus score in five or more rounds against Grandmasters at any time limit slower than blitz. Even more remarkable is the fact that Socrates was a pawn up in each of the two games it lost but went astray in the endgame when short of time. Socrates defeated Patrick Wolff (as did "Alpha" last year), Max Dlugy, and John Fedorowicz, while losing to Sergei Kudrin and Michael Rohde.


left to right: Patrick Wolff, Socrates, Don Dailey

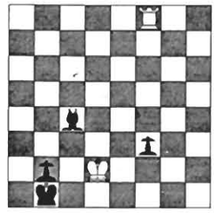
Since the Grandmasters had significant financial incentive to do their best, and since the programs were not allowed any operator time or even the right to change operators if one got tired, it is very difficult to explain this result, since clearly no commercial program is really of Grandmaster strength yet. Moreover,

That's Maxim Dlugy on the left and none other than Larry Kaufman on the right.

Wolff, Dlugy, and Rohde all had prior experience playing in the Harvard Cup, while Fedorowicz often plays blitz with a Fidelity Elite version 10, so they cannot claim unfamiliarity with playing computers. Do keep in mind that luck plays a great role in any short event.

The only other program with reason to be pleased is Mephisto RISC, which achieved an even score, defeating Dlugy and Fedorowicz and drawing Wolff. An even score would normally be expected to win the computer prize so the failure of RISC to win was not due to any fault of its own. This mid 2600s USCF performance contrasts sharply with the 2387 C.R.A. Action rating earned by RISC at a very similar time limit (game/30') a few weeks earlier. Although I was the operator in both events I cannot explain the discrepancy except to say that luck was with Risc in New York and against it in Chicago! Clearly this result shows that RISC deserved a Senior Master Action rating, although the Harvard Cup games could not be rated due to the time limit being 25' instead of the required minimum of 30'. The most amazing game of the event was Fedorowicz-RISC, in which RISC fell into an opening trap losing a knight for just a pawn. Fedorowicz then played an inaccurate move or two allowing RISC a strong attack, which ultimately won back the material and


John Fedorowitz and the RISC. And that guy Larry Kaufman again.



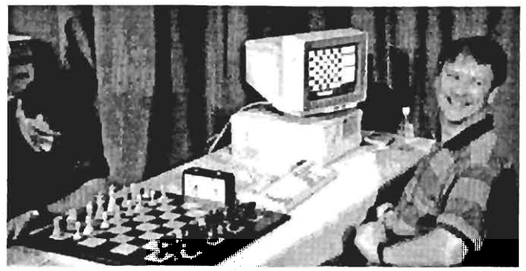
Please forgive our photo quality. The position they're looking at in post-mortem of the Fedorowicz-RISC game is above. They are (l to r): Michael Rhode, John Fedorowicz, Larry Kaufman (again), Patrick Wolff and Maxim Dlugy's left ear. *see p. 20 for the game.*

produced an ending of bishop and two pawns for RISC vs. a lone rook. Fedorowicz, down to his last minute, tried to claim that it should be ruled a draw without further play, but the directors properly ruled him down and within 3 or 4 moves he had to lose his rook and resigned.

"Knight Stalker" ("Fritz" in Europe) defeated Kudrin when he sacrificed unsoundly, but lost its other four games. ChessMaster 3000 managed only one draw in its five games. As for Fidelity Premiere, officially it lost all five but in reality it defeated Kudrin but lost on time while delivering the final mate only because the operator could not determine quickly whether a pawn was promoting to queen or knight the move before mating. It had already wasted several minutes earlier due to the operator's unfamiliarity with the machine and to the director's refusal to allow clocks to be stopped or to allow me to assist the operator. A score of 1 out of five is still a 2400+ performance, so the Premiere performed in line with its 2424 C.R.A. rating.

So the computers scored 7 (or 8 counting Premiere-Kudrin as a win) out of 25, or 28% (32%) vs. last year's 25% (the previous year they scored only 9%). The rather small improvement this year is due to several factors: Last year the computers were lucky, this year three of the five entrants were not among the top echolon, and no new generation of processors for the pc came out during the year (though there was a speed increase). Next year, assuming the 586 (or whatever Intel calls it) is out, the programs might come close to an even score, especially if only top level programs are invited.

As for the human participants, GM Rohde took first place, winning all five games, Kudrin was 2nd at 4 (including the "win" over Premiere), and the other three GMs all had 3 points. That very same weekend, GM Max Dlugy won both the U.S. Game/10 and Game/15 championships, giving both Socrates and Mephisto RISC extra reason to be proud of their wins over Dlugy.



Maxim Dlugy, Socrates and a very happy Don Dailey
Note that Larry Kaufman is not in this picture.

C.R.A. and W.B.C.A. tests at Chicago International

This April, both Mephisto and Novag decided to get C.R.A. Action Chess (30') ratings during the Chicago International. It was a logical venue because the one round a day schedule left the players with ample free time to participate in the C.R.A. events, and because enough strong players would be present. Mephisto of course rated the new Mephisto RISC, while Novag finally decided to rate its year-old Diablo. Each model was to play 48 Action games against 24 strong opponents (each person playing one black and one white), although due to a smaller than expected turnout at the International, two or three players were allowed to play 4 games to reach the required 48. RISC was operated by Don Dailey and myself, while Diablo was operated by Dave Kittinger and Max Harrell, who usually operates for Saitek in tournaments. Games were USCF rated, and players received $50 per point scored.

Because the Elite Premiere had already earned a 2424 C.R.A. Action rating and the RISC crushed the Premiere 5-1 in head to head Action games I ran, and because the RISC hardware is nearly three times as fast as the Premiere, it seemed that a 2500 rating was a real possibility. But when it actually faced International Masters and Grandmasters, it did not fare well. It did beat two I.M.s (Jay Bonin and Tim Taylor) and drew a few for about a 40% score against the I.M.s, but it only managed a couple draws in ten games against the G.M.s. Roman Dzindzichasvili in particular made both RISC and Diablo look pathetic in all four games. This seems strange now after seeing RISC do so well in the Harvard Cup at a similar time limit (it went 2 1/2 out of 5 against G.M.s in that event). RISC did beat up pretty well on the untitled players and ended up with a 2387 C.R.A. rating (initial figures showed 2405 but some of the opponents dropped sharply between the last published list and the up to the minute figures used by the C.R.A.). In comparing this figure with the Premiere's 2424 Action rating, keep in mind that the Premiere did not have to play a single FIDE titled player. In theory this should not matter, but with computers it does seem to be most advantageous to play opponents about a class below the computer's real level. RISC lost one game on time (but was losing anyway), and no one lost on time against it who wasn't clearly lost anyway. The final tally was 23-25 against a field averaging just over 2400. In contrast, the Premiere faced an average field just over 2160.

Novag had good reason to hope for a 2300 rating, since Novag machines tend to do well at fast clips, and indeed they were successful. The 2309 rating reflects a solid plus score against a field averaging in the mid 2200s. Diablo did have very good luck, winning three lost or drawn positions on time, including one hopeless game from a grandmaster. In contrast to RISC, Novag scored well enough against strong players but failed to win with much consistency against the weak ones. This has also happened at other events in which Novag participated--it shows flashes of brilliance but is a bit erratic.

So now six models have C.R.A. Action ratings. Fidelity Premiere is 2424, Mephisto RISC is 2387, Mega IV Turbo (no longer sold) is 2361, Novag Diablo and Scorpio (same program and speed) are 2309, and Fidelity Travel Master is 2062.

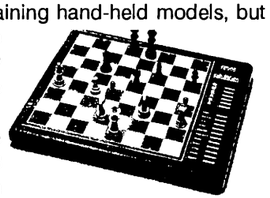
After the C.R.A. tests we decided to get World Blitz Chess Association (W.B.C.A.) ratings for RISC and Diablo. This requires 30 games of five minute chess under W.B.C.A. rules. Players received $10 per point scored. Computers forfeit on time only when their own clock says they do, so operator time is not a factor (in C.R.A. tests the external clock governs and the computer's internal clock is set at five minutes less than the allowed time, but for five minute chess this is obviously not possible). Since Mephisto Vancouver 32 bit had already earned 2610 under these rules and since RISC is stronger, I thought it should do well, but its final rating of 2678 exceeded all expectations. It beat U.S. Junior Champ Alex Sherzer by 4-2 and Grandmaster Dmitri Gurevich by 4 1/2 - 3 1/2. Diablo ended up at 2510, doing well in most of its matches but somehow getting shut out 0-8 by perennial Grand Prix winner Igor Ivanov. Note that all three of these W.B.C.A. tests have produced ratings somewhat over 200 points above estimated 40/2 ratings. Maybe the easiest way to rate computers against humans is just to get them Blitz ratings and knock off about 240 points!

There were also several money matches between computers and Grandmaster Dzindzi. Suffice it to say that Dzindzi won most of the games but the computer operators won the money due to Dzindzi giving excessively generous match terms.

Excalibur Electronics

This company was formed recently by two top salespeople from Fidelity Electronics -- Shane Samole (son of the founder of Fidelity, Sid Samole) and Terry Everett. It is located only a few blocks from Fidelity in Miami, and is dedicated to the proposition that by keeping overhead to a minimum, the price to the consumer can also be kept down. When Mephisto bought Fidelity from Sid Samole, he had to sign an agreement not to compete, but this did not apply to his son. Excalibur currently imports the "Sphinx" line of computers, which are known for their modest prices and decent (if not top) playing strength. Excalibur plans to sell top end models next year.

The two models of interest for this year are the old "Advanced Star Chess" (shown left) and the new "Legend"(shown at lower right). Advanced Star Chess is of interest because the price is expected to be very low, under $70. The playing strength is low class A (the Swedish list puts it in high B at 40/2, but it is relatively stronger at faster time limits and performs far above its Swedish rating on almost all problem sets) , and the unit is a peg-style travel set. With Travel Master discontinued, Novag Super VIP and Marco Polo are the two strongest remaining hand-held models, but they are more expensive than Star and only modestly stronger. All three of these models use the 6301 chip.

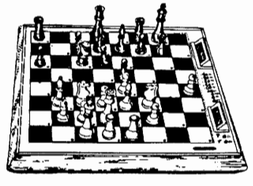


The Legend is a table model utilizing the new h-8 chip. The Hungarian

programmer is new to the dedicated model field, but has been successful in pc program competition. This model was to be the Fidelity "Miami", but when it was cancelled by Fidelity, Excalibur picked it up. My early testing shows it to be in the low Expert range, though it's too early to be specific. Since it has a display and a price just under $100 is expected, it should be a very good value, as the cheapest Expert level game right now is the Fidelity Designer 2100 Display at about $130. The program seems to be rather similar to the Richard Lang Mephisto programs, that is to say very selective, but the tiny RAM size keeps it from reaching the high Expert level achieved by Mephisto Mondial 68000 a few years ago, even though the h-8 at 10 MHz is faster than the 68000 at 12. The similarities between the early Lang programs and the Legend are quite striking, leading me to suspect that the programmer patterned his program after Lang. My test results at sudden death levels were a bit disappointing, apparently because the program moves much too fast on these levels, but on the normal levels it seems to be comfortably over 2000, making it the world's strongest table top chess computer under $100.

Fidelity Review

I'm sorry to say that most of the planned new models have been cancelled or indefinitely postponed. Here is the story in brief: Early this year, a detailed accounting revealed that Fidelity had somehow managed to lose over $3 million in 1991. I can't really understand how this was possible, although part of the problem was underpricing (i.e. the Mach III retailing for under $200, the Travel Master at $75, etc.). Another problem was that many machines were sold which could not be delivered in acceptable quantity (Little Chesster) or quality (Travel Master). So the owners (Hegener & Glaser, which also owns Mephisto) decided to cancel all manufacturing by Fidelity and all new models except those which were to be built overseas. The majority of the employees were laid off, with only sales and service personnel and a few others left. So except for some very low end models built in Hong Kong or China, Fidelity may become a Mephisto sales outlet once its present stock of machines is gone, unless plans change. As things look now, this may be the final review in CCR of new Fidelity products, though Fidelity itself should survive as the U.S. arm of Mephisto. In fact I am told that Fidelity has already returned to profitability.



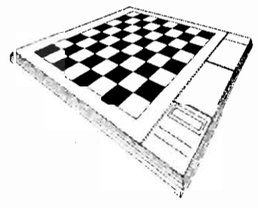
The Fidelity Elite Premiere (right) remains the strongest wood autosensory model under $1000 with its (admittedly lucky) 2424 C.R.A. Action rating and its 2320 estimated rating at 40/2. The Designer 2325 model, despite offering 2300 vicinity strength for under $500, has been largely upstaged by the Mephisto Berlin, which I consider the better value of the two. Still, if the price gap between the two widens to $100 it may appeal to some. The Designer Mach III is still the only master rated game under $200 (or even close), and so remains a great buy until sold out. The Designer 2100 Display remains the strongest table model under $150 so far. Little Chesster is still the strongest model under $100, until "Sphinx Legend" becomes available. I expect that by the time that these models sell out, Saitek, Novag, Mephisto, and newcomer Excalibur will all have models out of similar price and strength, due largely to the growing popularity of the fast and cheap h-8 chip.

As for Travel Master, planned new versions without the many problems have been cancelled and the original is no longer in production, so we will have to look to other companies for Expert level travel games. The same goes for the inexpensive Fidelity RISC model that was expected about now, though its place will be taken by Mephisto Madrid eventually.

Since there are no corrected Travel Masters to offer owners of defective ones under warranty, owners are being offered in exchange for their Travel Master the choice of a Mephisto Marco Polo as an even exchange or a Mach III for an extra $75. This is quite a bargain since most people paid between $75 and $90 for Travel Master, making the total cost of the Mach III only about $160. Most Travel Masters work reasonably well for a while, but after some weeks or months some of the squares cease to sense pressure, rendering the unit useless.

Mephisto Review

The most important new products from Mephisto are the Mephisto Berlin and the Mephisto RISC. Several years ago Mephisto decided to put its then-champion program (Dallas) into an affordable housing, and the resultant Mondial 68000 xl was a big hit here. Now Mephisto has chosen to repeat history by putting its best 16 bit program (Vancouver) into an affordable housing. This model, the Mephisto Berlin (right), actually has a program upgraded from the champion "Vancouver" program, and has the same speed and RAM as the standard Vancouver 16 bit program. The opening book is smaller than the Vancouver book, which means a bit less variety but no loss in playing strength, and some of the more exotic features are missing in the Berlin, but it retains a large powerful book and more features than most other models. For some reason, testers around the world are getting significantly better results for Berlin than for Vancouver 16 bit. For example, testing for "Ply" magazine shows the Berlin 34 points above the Vancouver 16 bit. This may be due to the elimination of some poor opening lines from the book, to chance, and to a genuine program improvement of perhaps 10 points estimated by Richard Lang, the programmer. The housing is just like the Milano with the laptop design, but Berlin has lights on every square, which many users prefer to the coordinate system used by the Milano and most other inexpensive models. In my opinion, the Berlin is clearly the outstanding value in the market for people who want good playing strength and a price under $500. As compared to its main rival, the slightly less expensive Fidelity Designer 2325, the Berlin is somewhat stronger, more attractive, has more features, has lights on every square, and is apt to be more durable. True, the Fidelity unit is 32 bit and enjoys about a 2.75 to 1 hardware speed advantage, but the Berlin program is several years newer and far superior, which more than makes up for the hardware. In my own test Berlin beat the 2325 unit by 6-2 at 10' chess, and if it rates 10 points over Vancouver it will be 53 points over the Fidelity unit on the "Ply" list.



The Mephisto RISC has now been out for some months and it has been well tested. It is currently leading the Swedish "Ply" list at 2467 USCF equivalent, a hundred points over the Vancouver 32 bit model (which is only slightly less expensive). My own action chess testing against other models gives 14 points less, and my 10' results 33 less. This suggests that it benefits more from longer time limits than other models, which has always been the case with other Schroeder programs. Against human opposition it did very well in the Harvard cup in Action chess (2658 USCF performance!) in five rounds against grandmasters, but only earned 2387 in its 48 round C.R.A. Action chess test in Chicago. So its total performance in action chess in the U.S. is 2413 for 53 games. In blitz it achieved an astonishing rating of 2678 from the World Blitz Chess Association after 30 games against titled players. It beat U.S. Junior Champion Alex Sherzer by 4-2 and beat Grandmaster Dmitri Gurevich by 4 1/2 - 3 1/2. In standard tournament chess (40/2) it earned a performance rating in the 2500s in one short British event, but only 2300 in the British Open. Perhaps if we consider all of this, we can conclude that its real strength in tournament chess is not far from 2450. This is in line with expectations, since the program is upgraded from the "ChessMachine" program which I listed last issue at 2437. Since the speed is reduced from 15 to 14 MHz but the Ram is doubled to 1 Megabyte, I regard the hardware as equal to the ChessMachine 512k. Clearly Mephisto RISC is the strongest model on the market now (except perhaps the Vancouver 68030, which costs about four times as much and is only slightly stronger, if at all). The price of nearly $2000 in the Exclusive board looks high when compared to the "ChessMachine" (for use in PCs), but when compared to other Senior Master level dedicated models (Vancouver 68030, Fidelity Elite version 10) it looks like a bargain.

Will there be further upgrades of the Almeria-Portorose-Lyon -Vancouver line, or will owners have to buy the expensive RISC Modul to upgrade? I don't know, but I think one more upgrade is likely. The Berlin program already appears to be better than Vancouver, and a further gain will be achieved by a slight increase in the value of the rook, since the Vancouver tends to make some unsound exchange sacrifices. This will of course not amount to enough to bring the upgrade up to RISC level (except for 68030 owners), but it will be further inducement to owners of the older versions (pre-Lyon) to upgrade.

As for the less expensive models, the Milano remains a very appealing unit with its "Ply" rating just 8 points below the Mach III. Because the Milano is better looking, has the laptop design, and is apt to be more durable than the Mach III, I would opt for the Milano at the same price, but at this writing the price gap is $50 and the Mach III is a bit stronger at the faster levels.

One new model that needs mention is the Modena. It is like the Milano without the laptop lid, but runs at 4 MHz instead of 5 and reportedly has a Morsch program rather than the Schroeder program in the Milano. As it is just beginning to arrive in the U.S., I have not tested it, but Eric Hallsworth's list rates it as a strong Expert and if this proves to be so, it may become a good seller (current price under $170), especially after the Mach IIIs are gone.

In the hand-held category, the Marco Polo has come down in price and with Travel Master gone is now the strongest cheap (under $100) model on the market. It's a simple program with a small book, but it is quite fast and so falls in the mid class A range.

As for the future, "Mephisto Madrid" is planned in place of the cancelled Fidelity Designer 2400. It is expected to have the same processor and program as the Mephisto Risc, but only 128K RAM (vs. 1 Meg, which should cost about 30 points), and will not be autosensory but will be in a plastic pressure board like Mephisto Berlin. Release date and price are unknown, though my guess for the price is just under $1000 (less if the Saitek RISC model is much cheaper and available at that time).

Novag Review

Unfortunately there have been no new models for tournament players since our last review, but at least there is some good news for consumers in that the decision to distribute thru a middleman (British Boston), which resulted briefly in a doubling of prices, has reportedly been reversed, so prices are back to where they were. However, in the meantime other models have clearly surpassed comparably priced Novag models, so only the Super VIP remains of much interest, and its supply in the

U.S. is questionable at this time. With the Fidelity Travel Master out of production and physically unreliable (though quite strong), Super VIP is the strongest remaining hand-held unit (with Mephisto Marco Polo close behind) and now reasonably priced. In choosing between Super VIP and Marco Polo, keep in mind that the Super VIP has a much larger opening book and keypad move entry, while the Marco Polo is less expensive and is a peg- style unit which works by pressure. The playing strength of the two (after the opening book is exited) is too close to call. The Novag Scorpio has been clearly surpassed by the comparably priced Mephisto Berlin, while in the wood autosensory category the Diablo suffers the same fate at the hands of Fidelity Premiere, although at least in this case there remains a fair price difference in Novag's favor. If there are still any Elite Avant Gardes left at discount prices, the Diablo has even more competition. The gap between the two Novag models and the Berlin/Premiere with Richard Lang's program is in the vicinity of a hundred points, (115 based on the C.R.A. Action tests) which Novag could only close by going to 32 bit or RISC. I still expect them to do this, though I don't know when or at what price. I also expect Novag to come out with a low priced low Expert level model (perhaps using the h-8) to compete with the Fidelity Designer 2100 and the forthcoming Saitek h-8 models (and Sphinx Legend) but again I don't know when.

Saitek Review

Unfortunately none of the planned strong new Saitek models have yet made an appearance, so we'll have to continue to talk about plans. There are three different high end products planned by three different programmers.

The first of these likely to appear is the long overdue "Brute Force" modul for the various modular wood boards (Galileo, Renaissance, and the older Leonardo). Like the Fidelity Travel Master, it is a Frans Morsch program, but should be considerably stronger due to substantial memory (enough for hash tables). Its pc twin is known as "Quest", which did very well at Aegon (see story). I'm expecting somewhere around 2200 USCF, but that's only a wild guess at this point. Considering the name and the analogy to Travel Master, it should be a very fast tactical analyser but not too sophisticated positionally or in the endgame. It might be of interest to those who already own one of the modular boards, but it is unlikely to be strong enough to justify the purchase of such a board when compared to Elite Premiere unless the price of the whole package is under $500, which would surprise me.

Perhaps more interesting is the planned "Megathon 2400" (the name may change), which is a plastic pressure board like the Prisma but containing the Acorn RISC chip and the "King" program as is also available for "Chess-Machine" (author Johann de Konig). It is rumoured to have 256k RAM and run at 12 MHz, which would make it about 30 points weaker than the ChessMachine 512k (15 MHz) version. If so, the 2400 rating would be right on target. If the price is $500 or $600 as expected (it is already advertised in Sweden for about $650 when available, and prices are usually lower here), it would clearly be the strongest model in its price range unless Mephisto releases its planned pressure board with Schroeder RISC (Mephisto Madrid) at around the same time and price (I doubt that the Mephisto unit will be this inexpensive, but perhaps the price gap will be modest). Ir appears at best that these models, if ever introduced, will not be seen until sometime in 1993.

Finally, Saitek still plans to release a high-priced SPARC modul for its modular wood boards eventually. The Spracklens are still working on it. Reports about its playing strength vary widely. Clearly it must be much stronger than 2400 USCF to be viable at several times the price of the "Megathon", so perhaps Saitek is waiting for new super-fast SPARC processors to come out to achieve such high playing strength. The fact that they chose not to enter the U.S. Open this year (or to participate in any other events) indicates that either the hardware or the software is not yet of adequate strength.

As for the inexpensive models planned to utilize the Frans Morsch program that is in the Fidelity Travel Master, I have read that only the most expensive of these models, the Kasparov GK- 2000, will run at the same speed as Travel Master (10 MHz), while the cheaper models (Turbo Advanced Trainer, Champion Advanced Traveller and Travel Champion) will all run at only 7 MHz. If so the GK-2000 should rate around 2100 and the others around 2060. The GK-2000 is expected in October at about $150. The others are a mystery at this time.

Rating the Commercial Chess Computers

As in the preceding issue, I am listing four ratings from different sources, with the "mean" column representing their average. This time I list "CCR30"' and "CCR10"' which consist of the results of games contested between computers by myself at those two time limits (mostly while talking to CCR readers while at Fidelity on Wednesdays), with rating differences contracted by 20% at 30' and 25% at 10' to allow for the observed fact that computer vs. computer results at fast time limits tend to magnify rating differences. All rating lists are scaled to match C.R.A. rating tests at 40/2 on average, with adjustment (using 75 points per doubling rule) for any speed difference between the C.R.A. unit and the one on that rating list. Eight C.R.A. ratings are used for this scaling, including one that was too low to justify commercial production at the rated speed. Eric Hallsworth's list from his British magazine "Selective Search" (SelSr) is based on both computer vs. computer and computer vs. human games at 1' per move or slower (I add 100 for British-U.S. rating adjustment; the correct figure I calculate to be 108), while "Ply" magazine's list is based solely on computer-computer games at 40/2 and is given with 200 added for Swedish-U.S. rating adjustment. Parenthesis around a rating indicate that it is calculated by adjustment from a slower or faster model.

ratings list follows

CCR Mid-1992 Ratings List

Computer	MHz	Mean	CCR30'	CCR10'	SelSr	Ply
Meph Lyon 68030	36	2470	(2489)	(2457)	2475	2459
Meph Vanc 68030	36	2465	(2494)	(2457)	2464	2445
Meph RISC	14	2464	2453	2434	2501	2467
Meph Port 68030	36	2437	(2410)	****	2457	2444
Fid Elite 10 040	25	2385	(2426)	(2357)	2376	(2380
Meph Vanc 32 bit	12	2366	2378	2341	2390	2355
Meph Lyon 32 bit	12	2362	2373	2341	2376	2357
Fid Premiere vanc	16	2352	2300	2399	(2363)	(2347)
Fid Elite 9 68030	32	2338	(2373)	(2304)	2349	2327
Meph Berlin/van16	12	2330	2305	2334	2349	2333
Meph Port 32 bit	12	2320	2293	****	2339	2328
Meph Lyon 16 bit	12	2318	2317	2310	2333	2310
Meph Almer 32 bit	12	2297	2294	****	2310	2288
Fid Designer 2325	20	2282	2313	2244	2283	2286
Meph Port 16 bit	12	2258	2240	****	2288	2247
Fid Elite v5 dual	16	2243	****	****	2250	2235
Meph Polgar 10	10	2238	2254	2222	2234	2241
Meph Roma 32 bit	14	2227	2212	****	2235	2233
Meph Dallas 32bit	14	2221	2232	****	2213	2219
Meph Almer 16 bit	12	2219	2220	****	2219	2218
Novag Diablo/Scorp	16	2206	2225	2168	2235	2196
Fid Mach3/Elite 2	16	2189	2203	2168	2188	2198
Nov Super Expert C	6	2186	(2182)	(2246)	2165	2151
Meph Mondial68000	12	2180	2194	****	2156	(2191)
Meph Polgar	5	2170	2192	2141	2176	2170
Meph MM5	5	2163	2146	2139	2183	2185
Meph Milano	5	2163	2123	****	2177	2189
Meph Roma 68000	12	2158	2158	****	2151	2165
Meph Dallas 16bit	12	2157	2128	****	2171	2171
Meph Academy	5	2142	2142	****	2145	2139
Nov Super Expert B	6	2142	2201	****	2124	2101
Fid Mach 2 L.A.	12	2127	2150	****	2116	2115
Meph Amsterdam	12	2126	****	****	2129	2123
Meph College	4	2124	2145	****	2103	****
Sait Gal Maes D	10	2112	2108	****	2116	2113
Fid Travel Master	10	2111	2104	2152	2117	2071
Meph MM4	5	2109	2128	****	2098	2100
MMeph Mega 4	5	2102	2114	2056	2122	2116
CXG Sphinx Domin	4	2096	2139	2104	2065	2075
Nov Super Expert	6	2092	2139	****	2087	(2051)
Nov Super Expert	5	2054	2092	****	2038	2031
Fid 68000 xl B	12	2044	2046	****	2033	2054
Sait Corona II and TurboKing II	5	2043	1995	****	2064	2069
Sait Stratos	5.6	2039	2090	****	2012	2015
Fid Des 2100 Disp	6	2032	****	2032	****	****
Sait Corona/Simult	5	2024	2073	****	1998	2002
Fid Par Ex/Chesster	5	2019	****	****	2012	2025
Meph MM3	5	2017	****	****	2016	2018
Novag Expert	5	2016	****	****	2023	(2008)
Novag Forte B	5	2014	****	****	2016	2012
Novag Forte	5	2007	****	****	2008	2005
Sphinx Legend	?	2005	****	2005	****	****
Fid Excel 4	4	1991	****	****	1983	1998
Sait TurboKing	5	1989	1987	****	1991	****
Sait Turbo Kasp	4	1964	****	****	1968	1959

Computer	MHz	Mean	CCR30'	CCR10'	SelSr	Ply
Meph MM2	3.7	1959	****	****	1951	1967
Fid Excel/Des 2000	3	1951	****	(1957)	1945	1952
Sait Prisma/Blitz	10	1951	1906	2028	1934	1934
RadioShack 2150L	8	1927	(1882)	(2004)	(1910)	(1910)
Nov Super Nova	16	1926	****	****	1921	1930
Nov Super Constel	4	1924	****	****	1922	1925
Nov Super VIP	10	1893	1911	****	1887	1883
USCF Academy/Meph Marco Polo/Europa	8	1871	****	****	1859	1883
Nov Const 3.6	3.6	1842	****	****	1842	1842
Novag Primo/VIP	8	1840	1849	****	1840	1832
Novag Const	2	1785	****	****	1779	1790
Advanced StarChess	8	1761	****	****	1765	1757
Fid Sensory 9	1.5	1714	****	****	1714	****
Saitek Astral/Conquistador/Cavalier		1686	****	****	1711	1660

PC Program Ratings

PC programs on 486/33 MHz (except ChessMachine and Chesscard, which have their own processors and so run the same on any pc regardless of its speed.) Those tested only on 386/33 are given with 60 points added to estimate performance on 486/33.

Program	Mean	SelSr	Ply	
ChessMachine 512k 15MHz-				
Schroeder v. 2.1	2435	2448	2422	
Konig "TheKing"	2416	2422	2410	
MChess (many vers.)	2401	2402	2400	
Zarkov 2.6	2347	(testing by Bill McGaugh)		
Grandmaster		2300 (estimated)		
Rexchess 2.30		2294	2298	2290
Psion 2	2294	2294		****
Zarkov 2.5	2283	2289	2277	
Fritz = KnightStalker	2260	2280	2239	
ChessMaster 3000	2174	2161	2187	(McGaugh)
Psion 1	2140	2140	****	
Colossus x	2086	2086	****	
ChessMaster 2100	2073	2073	****	
Final Chesscard	1887	****	1887	

The following pc ratings for new or forthcoming programs are based solely on independent automated testing at 30" to 1' per move, with the above mean ratings for MChess and Fritz serving as the basis for rating calculations. I used the same 20% contraction factor that I apply to CCR Action games in the calculations. Again, 486/33 hardware is assumed: Socrates 2415, Zarkov version 2.6 2366, Alpha 2304. The version of Zarkov tested was not quite the final 2.6, but close to it. Since the program "Grandmaster" is midway between Zarkov 2.5 and Zarkov 2.6 but 10-15% slower, it should fall around 2300. If one calculates ratings for MChess and Fritz from these autotest games by this method, the results are 2407 and 2254 respectively, each only 6 points away from the above mean ratings. This strongly supports the accuracy of the autotest and the above rating calculation.

PC Software

Since our last review, the only new program to come to my attention is "Grandmaster Chess", by Capstone. This is essentially the mass market version of Zarkov (between versions 2.5 and 2.6). Because of its more elaborate graphics and features, Grandmaster runs perhaps 10 to 15% slower than Zarkov (I can't say exactly because I don't have an identical version of Zarkov to compare) and so should play about 10 to 15 points weaker. This still makes Grandmaster Chess the strongest program likely to be found at present in your local software store but far from the strongest you can get from specialty chess companies. Only MChess, Zarkov 2.6, and the not yet released Socrates have solid claims to being stronger. As to whether one would prefer the newly released Zarkov 2.6 or Grandmaster, strong players might prefer the extra strength of Zarkov while average players might like some of the extra features in Grandmaster. See "The Capstone story" which follows. Zarkov 2.6 does seem to be noticeably stronger than last year's 2.5, though how much is difficult to say. My rating list shows a gap of 64 points, though some of this may be because 2.6 was tested at faster levels than 2.5, and Zarkov tends to do better at the faster time limits. Bill McGaugh's tests (see article) show only a small gain for 2.6 over 2.5 (34 points based on games against MChess, but 2.5 actually did better against other opponents).

MChess continues to release new versions almost weekly, with the latest in the 1.70s at this writing, but it is not possible to evaluate each one when they are this frequent so no one knows whether much progress has been made. The Swedish testers have detected little improvement from the first MChess to now, but some problem sets do suggest that improvement has been made. In any case, the real gain should come when MChess Professional is released (requiring 386 and above with at least 2 Meg RAM, just like the forthcoming "Socrates"). MChess (1.71) remains clearly the strongest program on the PC market, although automated testing showed that "Socrates" is just as strong (Socrates won 50.5 - 49.5 against M). Either program on a 486/50 MHz should be as strong as the

"ChessMachine 512k", but ChessMachine remains the strongest program on any lesser hardware, since it comes with its own (RISC) processor and memory.

As for ChessMaster 3000, while it has proven to be a significant upgrade from "2100", its results do not place it in the same league with Zarkov 2.5, KnightStalker, Rex, or Psion 2 (never mind MChess). CM 3000 seems to lag about 50-100 points behind those four programs (which are very closely bunched in strength). Since it performs roughly as well as those programs on problem sets, I am curious as to what is the missing factor that accounts for its poorer performance in practice. It is likely that the answer is also the explanation of why Novag programs always do better on problem sets than in computer vs. computer competition, since Dave Kittinger is the author of both. Either it must relate to the evaluation of positions, or else the problem sets do not accurately reflect the type of tactical errors made by programs in actual practice (or both).

As for the programs of myself and Don Dailey, "Alpha" is due to be mass-marketed (under another name) very soon, while Socrates may be delayed in order to be sold as an upgrade. These decisions are out of our hands; we completed the chess-play program in May. We have now developed a fourth program called "Titan", which we expect to sell to serious players as we did "Rex". It is still very primitive but already stronger than Rex and Alpha. We hope that when refined it will be stronger than Socrates. It is likely that we will offer both 386+ and regular pc versions. As we have an autotester to test it against MChess and Zarkov 2.6, it should be easy to determine when it has surpassed either or both of those programs.

The Capstone Story

by Paul DeStefano

As you may or may not know, depending on whether or not you read the above piece thoroughly, the Zarkov algorithm is now available in a publically available "bells and whistles" release called Grandmaster Chess. We were hoping to have a nice, in-depth review of this new software, but due to time constraints, we could not.

What kind of time constraints could CCR have with the first issue of the year out in August? Well, it goes like this:

When we found out about Grandmaster Chess, we called Capstone and asked for a review copy. As most software companies do, they asked us a bunch of questions and decided we were legitimate. The very next day, Grandmaster Chess was on my desk. I was impressed by the service, and started to install the game onto the CCR computer. It had superVGA graphics, digitized speech and supported most major sound boards. It looked and sounded great. Unfortunately, the thing cheated, locked up, had major graphics problems and generally didn't work too well. I called Capstone and asked what was going on. They requested I detail the problems in a fax to them.

My list of errors was two pages long, including details of pawns duplicating themselves, and the game allowing the player to move a knight one square over and three rather than two spaces up.

A week passed.

A Federal Express box appeared on my desk one day with an apologetic letter thanking me for my input and testing and including a new version of Grandmaster.

Each bug I had reported was fixed (and incredibly quickly at that), and they sent along their latest program (a windows blackjack game) as a gift. Since then, we simply haven't had the time to give Grandmaster a real work-out. However I must congratulate Capstone on their efficiency and care in this situation. This is a top-notch company that wants a bunch of satisfied chess players out there.

As for Grandmaster, they promise it will beat Sargon and Chessmaster or your money back (no great shakes), and it does have some really fancy bells and whistles. If you like gadgets and chess boards you can set up with monsters, find yourself a copy of Grandmaster.

M Chess versus Zarkov

by Bill McGaugh

One of the most interesting aspects of the computer chess scene is the competition for best PC program. I have spent a considerable amount of time in the last two years playing the leading programs against each other.

This article is intended to summarize some of the results.

The two best programs for PCs are M Chess and Zarkov. Zarkov has many more analysis features and utilities to help players study their games, modify the opening book, and determine their rating. M Chess's main features are playing strength and ease of use.

I have played a fairly large number of games between Zarkov and M Chess, as well as playing games with other programs and dedicated units. Most of these games were played on a single computer using Windows, without thinking on opponents time. The vast majority of the games were played at game in 30 minutes.

In head to head testing on a 33/386, M Chess (various versions) is ahead of Zarkov 2.6 40 wins-37 losses-24 draws (51.5% or about 10 rating points). Zarkov 2.5 was only able to score 43.7% wins against M Chess (M Chess 99 wins-74 losses-24 draws). Zarkov seems to be closing the gap.

Neither program seems to have a particular weakness that the other program can exploit. They are both powerful tactically, and their endgame knowledge and strengths are similar. If default settings are used, Zarkov will play a large variety of openings, while M Chess tends to play a more select set of openings.

In a small (15) set of problems that I use to get a quick feel for the tactical speed of programs, M Chess came out slightly ahead (14.1 seconds geometric mean versus 16.22 seconds for Zarkov 2.6).

Games against other programs also give an edge to M Chess. Against the Mephisto Berlin (12/68000), Zarkov 2.6 (33/386) has a record of 11-20-3 (36.8%), while M Chess has won 42.6% (8-12-7). Against the Mach III, Zarkov 2.6 is 22-12-2, and Zarkov 2.5 is 66-21-17, so the combined percentage is 69.6%. M Chess is 105- 26-17 for 76.7%.

Some other selected results:

	W-L-D
Zarkov 2.5 vs. Rex 2.3:	24-8-7 (70.5%)
Zarkov 2.6 vs. Rex 2.3:	11-10-4 (52%)
M Chess vs. Rex 2.3:	37-14-5 (70.5%)
Zarkov 2.6 vs. KnightStalker:	11-15-12 (44.7%)
M Chess vs. KnightStalker:	6-3-0 (66.7%)
Zarkov 2.6 vs. Chessmaster 3000:	8-1-4 (76.9%)
M Chess vs. Chessmaster 3000:	6-1-1 (81.3%)
Zarkov 2.5 vs. Mephisto Mondial xl:	50-33-23 (58.0%)
Zarkov 2.6 vs. Mephisto Mondial xl:	16-14-2 (53.1%)
M Chess vs. Mephisto Mondial xl:	98-26-22 (74.7%)

Zarkov has had its problems with certain programs, notably KnightStalker and the Mephisto Mondial. M Chess consistently dominates every program except Zarkov. Although not a topic for this article, KnightStalker's overall performance has not been up to the level of Zarkov or M Chess.

Based on all of the data that I have collected, I would still rate M Chess as the number one program on PCs, with Zarkov second and closing. The next few months should bring a new, more powerful M Chess, more improvements to Zarkov, and hopefully, the release of Socrates. It should be interesting.

How Does M Chess Do It?

By Marty Hirsch (the programmer)

How has M Chess, running on inexpensive Personal Computer clones, consistently scored higher than any other commercially available chess system, and higher even than Million-Dollar computers such as Hitech and Cray Blitz?

So there it is, the 64-square question. The next few paragraphs attempt to answer that question.

The M Chess software has two major abilities. These are known to chess players as: 1)Tactics and 2)Strategy, or to programmers as: 1)Search Algorithms and 2)Chess Knowledge.

Probably the principal reason for the strong showing of M Chess is its facility with tactics. Often it can spot combinations in just a few seconds whereas other programs, running on comparable hardware, would require many minutes or even hours. This is due to its specialized "search algorithms" which help it decide which continuations deserve the most attention. Some of the tactical themes which it recognizes "at a glance" are forks, pins, skewers, trapped pieces, mating nets, and pawns which promote by force!

Conventional chess software based on the "exhaustive search" or "brute force" method, which has been the preferred approach since about 1980, can only understand tactical continuations with a limited range. Thus, if a conventional chess program can look ahead three moves for each side, it will recognize tactics with significant consequences within those three moves, but that is all. M Chess, on the other hand, sees the relevance of tactical themes, the "bread and butter" of the chessboard, several more moves in advance.

The "tactical extensions" used by modern chess software to look deeper in lines of play which include checks, recaptures, and sometimes threats improves on this situation, but only a little. A program with this type of extension still doesn't know that two pieces are under attack several checks and/or recaptures beyond the full-width "event horizon." M Chess, on the other hand, not only detects this type of situation, but considers the consequences in detail!

The tactical alertness which is a trademark of M Chess helps it to avoid errors, and to take advantage of the combinative opportunities which arise in almost every game. Also, this same alertness allows it to steer clear of sidelines, and to guide play into those positions which it evaluates as favorable for itself. This enables M Chess to assert its second major area of strength which is chess strategy, or for computers, "chess knowledge".

The M Chess software incorporates a great deal of chess knowledge. This knowledge is used by M Chess, just as it would be used by a human player, to decide whether to play into the various positions that could come up in a game. This helps it make sound positional decisions and accumulate both positional and material advantages.

When evaluating a chess position, M Chess first classifies the position as an opening, midgame or endgame. Then it considers many features of each type of position.

In the opening the key factor, other than material, is development; therefore, development is the strategic goal for the opening. In the midgame key factors are center control and king safety, which is evaluated with regard to whether the kings are castled on the same side, opposite sides, or not at all. In the endgame key factors are passed pawns and active play with the king.

The positional considerations of M Chess include a detailed analysis of pawn structure, the mobility of every piece, knight outposts, rooks on open files, good and bad bishops, and the placement of the kings with regard to the stage of the game. Even during the opening or midgame, when an endgame position occurs in the analysis, it is treated as an endgame. For an endgame position, the relationship of each passed pawn to both Kings and all the remaining pieces is considered in detail. This "realistic" approach to evaluation combines with the tactical alertness to produce play with notable strategic sensibility.

The endgame is the area of chess most neglected by students and computers alike. But not by M Chess! For this important phase of the game, M Chess kicks into high gear with a unique repetoire of special abilities based on the "Expert System" approach to artificial intelligence. M Chess recognizes and understands: Key rook and pawn positions, including Lucena and Philidor positions, the square-of-the-pawn, minimum mating material, checkmate with knight and bishop, piece against pawn, every type of draw.

M Chess Professional will compete in public for the first time in the 7th World Chess Championship in November, 1992 in Madrid, Spain. We will have to wait patiently to see the results.

Why Go Pro?

by Paul DeStefano

M Chess Professional is on the way! What makes it different from plain old amateur M Chess? A lot. Please realize that this article is being written on August 18th and some more features may be added or subtracted by the actual release date, but here's what we know:

For starters, the system requirements. If you want to run M Chess Professional, you'll want a fast processor. That means no XTs. It will run on a 286, although it will be limited. It will also run in as little as 640K RAM, but that will also restrict the program. For optimal use you should have a 386 or better and you'll also need at least 2 Meg of RAM. M Pro will automatically detect whether or not you have a 386, so it will know what it can or cannot do. It will take several Meg of hard disk space, although at this time we're not sure exactly how much. If your system doesn't stack up to these cutting edge standards, you'll have to stick with regular M Chess or upgrade your computer.

If your system has LOTS of RAM, good news. M Chess will create up to 10 Meg of Hash Tables in RAM. For games at slow time controls, this will really pump up the end game strength. This means you'll need about 12 Meg to take advantage of this feature, since M Chess itself needs some RAM to hang out in.

People complained about a small opening book in M Chess. The Professional's book is a whopping 7 TIMES larger! And that book will also be programmable.

ASCII import will also be available, as well as analysis recording. The Professional will also have improved graphics of a slightly higher resolution. No SuperVGA 1024x768 here, but better than plain M Chess' sparse graphics. Of course, it will also be quite a bit stronger due to lots of new chess knowledge, but we're going to wait before we promise how strong.

For those of you who already own M Chess, ICD will be doing exclusive upgrades to M Chess Professional. The price should fall somewhere around $80.00, with a new M Chess Professional under $150.00. ICD will mail post cards to all customers who bought M Chess from them when they are ready to start the upgrade process (Oct?). As with previous upgrades, you will be required to send in your original disk.

Bits & Pieces

(letters from readers)

Thomas Lightfoot, Beaumont, Texas

The enclosed chess games are the results of a 10 game match between Fidelity Mach III Master and Chessmaster 3000. Mach III won the match with a 6.5 to 3.5 score. [Thomas had previously submitted a match under identical conditions between Mach III and Rexchess, won by Rexchess 6.5 to 3.5]. Mach's tournament book was engaged for optimal play. Thinking time was set at 1 minute a move. CM3000 was run on a 386 based 33MHz IBM clone with 64k of cache. In talking with Software Toolworks, I was told the CM3000 should perform somewhere close to 2200 USCF rating. My test of the program would suggest a rating somewhere between 2075 and 2100. If this is correct, is the program any stronger than CM2100? I have started a match between CM3000 and the Novag Super C. Novag leads 2-0.

Reply: Although 12 games is a tiny sample, it is not likely that a 2200 opponent would score only 3 1/2 against those opponents. Eric Hallsworth lists CM3000 at (USCF equivalent) 2101 after 42 games on 386 machines, but this may have included slower 386 sx machines. Probably it is somewhere in the mid 2100s on a 386/33 and was a bit unlucky in your games. Also, there is more than one version already which confuses the issue.

Roy E. Brunjes, Rochester, NY

I thought you'd like to include the following result in your next issue of CCR: 48 games at game/1 hour between Fidelity Designer Mach III Master and Mephisto Vancouver 32 bit (12 MHz). Result: Mephisto won 37, lost 6, and drew 5, for 39.5/48. My ratings chart shows this to be a 260 point difference [I get 248 - ed.]. With the Mach III at 2210 (by your latest CCR estimate) we can apply a 20% contraction to the 260 to yield a rating of 2418 [2408 by my figures]. Tournament books were on for both units. Keep up the superb work on CCR!

Reply: I think Mephisto may do a little better than the ratings say against Fidelity, because the Mach III and IV were Richard Lang's principal autotest opponents. So if we allow for this, your result is close to expectations.

Sigurd M. Swenson, Sacramento, Ca

An article in CCR (v.s, no.1, p. 13-15) included two positions chosen to evaluate the playing strength of computers. Timing three of my computers on these problems produced a rather surprising result (times are in seconds):

	1st problem	2nd problem
USCF Academy	335	56
Par Excellence	940	86
Excel Display	1927	180

Par and Excel are, of course, rated higher than Academy, and my experience with them confirms that.

If the Academy really is that fast compared to stronger computers, what is the reason? In your articles on chess mips (CCR, v.1, no.2-3) you give the speed of the Mephisto Marco Polo and Europa as 0.5 CM. Presumably the USCF Academy would be the same [correct]. Par Excellence would be 1.5 CM and Excel Display 0.9. You are doing a fine job on CCR! Keep it up.

Reply: Yes, the Europa/USCF Academy/Marco Polo is much faster on many problems that one would expect from the hardware. There are certain problems that it cannot solve in comparable times to the Fidelity Excel, and others that it cannot solve at all (unlike Fidelity), but they are in the minority. There are several explanations for the speed: programmer Morsch uses a restricted quiescence search that will cause errors on occasion, his evaluation function is extremely primitive and therefore fast, not all checks are extended, his coding is super-efficient, repetition detection is primitive, stalemate detection is poor, the program does not know to trade pieces when ahead and avoid trades when behind, does not know about minimum mating material or square of the pawn, and so on. The above also applies to Travel Master, also by Morsch, which is also super-fast. Travel Master takes a further short-cut in being blind to Zugzwang. In short, every reasonable short-cut is taken for speed. For a problem set to rate such machines correctly it must include problems that test the above factors, which means it must have many problems to be accurate.

J. Peters, Los Angeles, Ca

Why are the Elo ratings for chess playing computers found in CCR so much higher than the ratings found in "The Swedish Rating List" that appears in every issue if ICCA Journal?

Reply: Computers regularly get USCF ratings about 200 points higher than they get in Swedish (and most Continental European countries) tournaments. So we at CCR add 200 points for USCF conversion (as recommended by the Swedes) when quoting their ratings, and tie all our rating lists to that level on average. Our lists agree quite well with the USCF Computer Rating Agency ratings on average (though not in each individual case). There is a bit of a mystery here: It is well known that USCF ratings run nearly a hundred above FIDE ratings, but since European ratings are supposed to agree with FIDE ratings on average, where does the second hundred points come from? I'm not sure, but I think that the answer is that the European ratings of players below the 2200 level where FIDE begins are depressed further relative to ours because we have always had bonuses or floors that benefited these players while I suspect that most European countries do not use bonuses or floors. If anyone knows the precise rules on these matters in Europe please write. If I am correct, the correct amount to add to Swedish ratings should not be a flat 200 but should gradually taper down from a larger number at low levels to around 100 at Grandmaster levels. With computers rapidly approaching GM level, this issue is no longer moot. I would like to get this matter clarified soon.

Tom Glen

Why has Mephisto not gone to a 486 chip? *[It is rumoured that Richard Lang is currently working on exactly that, although I don't know whether it's intended for pc use, dedicated models, or tournament competition. He reportedly has found that the 486 at 33 MHz is as fast (for his program) as the 68030 at 50 MHz.]*

Since most people will sooner or later be purchasing a computer system, maybe you could keep us updated on developments, and what specific components would enhance overall performance related to chess. EISA bus? *[useless for chess play]* Internal/External Cache? *[Internal cache very useful, external cache moderately so, depending on the program].* Accelerator boards? Clock-doubler chips? *[Very useful for simple programs like "Knight-Stalker", not so good for large, complex programs like Socrates. "Socrates" runs faster on a plain 486/33 than on a 486/25 with the doubler.]*

With the explosion of new chips on the market (486 clock doublers, 586 and Alpha chip coming soon) could you do some sort of projection on a rating for Socrates, or M-Chess, utilizing all the different processors, 486, 586, "Alpha" etc. Also, give us your projection for the next 5-10 years in computer chess.

Reply: MChess (and hence also Socrates, since they test as too close to call) is about USCF 2400 on a 486/33, based on the Swedish list + 200 (see above letter). This puts them about 2435 on a true 486/50, and when the doubler comes out for the 50 MHz chip (to 100 MHz, but really about like 80 MHz) this should go to about 2470. The 586 at full speed is likely to be at least twice as fast as a doubled 50, so this should bring us to 2530. DEC's "Alpha" chip is supposed to be more than twice this speed, so if the programs were rewritten for it we could be up to 2600, though I wouldn't count on being able to buy an "Alpha" based home computer before 1994. DEC (Digital Equipment Corp.) projects that the speed of the "Alpha" chip will double every 2 1/2 years for the next 25 years, so at 50 points per doubling at these levels we will add 100 points every five years. Since Kasparov would be about 2900 on the USCF scale, this means that a commercial single processor machine would reach his level in the year 2009 if DEC is correct. Allowing for program improvements and increased RAM and better opening books, the year 2005 looks like a more reasonable guess. However, the possibility of using many processors at once (as the IBM Deep Thought project is doing, with 1000 processors planned) is what makes it likely that the goal of defeating the Champ will be reached in this decade, though naturally a machine with a thousand powerful processors will cost a fortune. For many years I have predicted that the year of parity between the top human and computer would be 1995, and I still have no reason to change this forecast, unless IBM pulls the plug on the Deep Thought project.

Pawn Shop

CCR is not responsible for the validity of the claims made in these ads, nor for the manner in which transactions are conducted. If you would like to place a unit for sale in the next issue of CCR, call ICD 1-800-645-4710 and ask for info.

Mephisto 32-bit Lyon like new. In Exclusive board housing $1000 or best offer phn: (706)798-3091

Mephisto 68030 Vancouver. Used for CCR testing. Barely played. $6500. Contact Your Move (516)424-3300.

Rate Your Own Computer

Twenty Problems

Quite a few problem sets have been published that attempt to evaluate the playing strength of chess computers, but all have serious deficiencies. Many problems may be solved for the wrong reason, or the solution may be found by luck. In some cases the solution is found because the program is blind to a seemingly strong counter which is refuted by some clever sequence. Even if we require a certain sequence of best moves to be displayed rather than only the first, this does not prove that the computer has correctly seen and refuted all counters. Some problems may have more than one correct answer, or the answer may be best but only slightly better than another move. Some problems may be too easy for today's computers, while others may require a long time even on the strongest micros. Many sets have a disproportional number of mate problems.

I have selected twenty tactical problems from several problem sets (including my own) that I feel are as free as possible from the above objections. They are mostly difficult enough to require more than just a few seconds on the strongest micros, while not taking more than a few minutes on most Expert level programs. I do not believe there are any alternate or debatable solutions, and none are apt to be solved without fully understanding what's going on. I have not yet seen any of these problems solved and then "unsolved"; once the right move is found (or the wrong move rejected if the problem is of the "avoid the trap" type) it is always kept as far as I know. Although a few of the problems involve seeing mate possibilities, they are not strictly mate problems -- no mate announcement is required for credit. They illustrate a wide variety of tactical themes found in practical play. Many of these problems are from actual games, but I don't always know from what game they were taken.

My procedure is as follows: Set your computer for a short (3 ply for most models) fixed depth search, and rerun the problem each time it is not solved, increasing the depth by one each time, until the correct move is found (or the incorrect one avoided). Note the total time taken to complete the search in which the problem is solved (This has the great advantage that you need not stand guard over the machine; you can check it at your leisure). If a problem remains unsolved after a much longer time than other problems are taking, you may list it as unsolved, but if this happens more than five times (out of the twenty) you'll have to rerun all the unsolved problems since I only allow the five longest times to be discarded. After all problems have been solved, total the fifteen best times (in seconds). The projected rating will be a function of that total time; I will need to collect much data and compare it to actual ratings to determine the function, which I intend to publish in the next CCR. Readers are invited to run the test and send in the results on whatever programs you happen to own. If you are testing a pc program, please specify the version number and the precise hardware you are using (e.g. 80386 25 MHz 32k cache 2 meg RAM). If you are testing a dedicated model please give the full name, including processor and MHz if known.

Problem Set

1: White to move. Solution Nf6+! (if ...gxf6 Bxe7 Qxe7 Qg4+ Kh8 Qh4 and black must give up his queen by ...f5 to parry mate). This problem tests for check extension, mate threat detection, and checks in quiescence. Source: "Test de Frontera" by Angel Vega Varela (ANACA magazine from Spain).

2. Black to move. Solution ...Nxd4! (After all the exchanges on d4 black plays ...Qe1+ and Qe5+ to emerge a pawn ahead). This problem tests for recapture extensions and for multiple checks in quiescence. Source: "T. d. Frontera".

3. White to move. Solution: White must refrain from Rd1?, which seems to win material, because of ...Qxd1+ Bxd1 Rxd1+ Ka2 (if Kc2 Rc1+ wins) Nd3 Q-any Nb4+ Ka3 Ra1 mate. This problems tests for seeing mates in quiescence and for sacrificial check extension. Source: "T. d. Frontera".

4. White to move. Solution Rxb2! (..Qxb2 Nc3 and Rb1 next trapping the queen). This problem tests for detection of subtle threats (threat to trap queen next). Source: "T. d. Frontera".

I modified this problem by moving the king from g1 to h1 as black has a delaying trick with the K on g1 that makes the problem too difficult for most computers.

5: Black to move. Solution ...Qxc1! (Qxc1 Rxc3 Qe1 Rc1! Qxc1 Ne2+). This problem tests for N forks in quiescence and for extension after pins. Source: "Test de Frontera".

6: Black to move. Solution: Black must refrain from ...Rxa2? because of Rxa2 Rxa2 Rc8+ Nf8 Bd6 Ra1+ Kh2 and black loses the pinned knight. This problem tests for recapture and check extension and for winning pinned pieces. Source: computer game published in "Modul" magazine.

7. Black to move. Solution ...Bxe4! (Bxe4 Qxc4 Qxc4 Rxc4 Bxf6 Nxf6 and white has nothing better than Nxb6 coming out a pawn down). This problem tests for recapture extensions and for the ability to see threats after delaying captures. Source: Bratko - Kopec test.

8. Black to move. Solution ...h6! (Qxb6 Rf1 Qd8+ Kh7 Qd3+ e4 and white must play Qxf1 losing Q for R+N. White does better to answer ...h6 by taking it with the bishop, which draws, but if black refrains from ...h6 he should lose. The computer need only see the Qxb6 line to choose h6; it makes no difference whether or not the computer also notices that white can still draw by Bxh6.) This problem tests for mate threat detection (...Rh1 mate) and for check extension. Source: Pierre Nolot's test in "Europe Echecs".

9. White to move. Solution Be2! (..Qb3 Bd1 Qc4 Rc1 and the queen is trapped. Note that since Rc1 in the problem position gives white some advantage, he will not choose Be2 merely to force a draw by repetition but only if he sees the win of the queen.) This problem tests for detection of trapped piece and for any extension for moving a piece attacked by a lesser one. Source: Jens Baek Nielsen's test (published in "Modul").

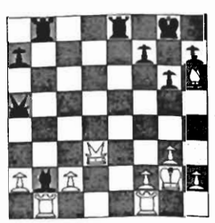
10. Black to move. Solution ...Nxc3! (bxc3 Qxc3+ Qb2 Qxb2+ Kxb2 e5 winning the pinned knight and emerging a pawn ahead). This problem tests for check extension and for winning a pinned piece. Source: Jens Baek Nielsen's test.

11. White to move. Solution Nf5! (threatens Rh7+ and next Qg7 mate. If either knight or rook is taken, Qh2+ followed by Qg3+ will force mate shortly. Although Nf5 forces mate, it is only necessary for a computer to see that black must surrender at least a rook by ...Re7 to delay the mate to choose Nf5.) This problem tests for the computer's handling of sequences of multiple checks leading to mate. Source: Kasparov vs. Csom.

12.: Black to move. Solution ...Rd6! (Qxd6 Qe3+ and black has perpetual check in all lines). This problem tests for recognition of repetitions that are not simple back-and-forth movements. Source: B-T test (Modul magazine).

13.: White to move. Solution Nxd5! (...Nxd5 Bc4 Rd8 Ne3 and if ...Nf4 or ...Nf6 RxN wins). This problem tests for ability to "sacrifice" (RxN) in the quiescence search. Source: my own composition.

14. White to move. Solution Rxb2! (..Rxb2 Qd4 Qe5 Re1! Qxe1 Qg7 mate). This problem tests for mates in quiescence. Source: Reinfeld's "1001 Sacrifices and Combinations".



15. White to move. Solution Bxf5! (..exf5 Nxf5 Rg8 Re8! Qxe8 Qf6+ Rg7 Qxg7 mate). This problem tests for recapture extensions and for check testing of captures in quiescence. Source: Reinfeld.

16. White to move. Solution b4! (...cxb4 c5! dxc5 e5 c4 d6 and white will queen). This problem tests for understanding of "Square of the Pawn" rule, and for hash tables, both of which are very helpful, though not essential, for solving this problem. Source: My own composition.

17. White to move. Solution e5! (...dxe5 Qf3 Qe7 Ne4 and the pinned knight cannot be saved). This problem tests for extension of moves of piece attacked by a lesser one and for recognition of multiple attackers and defenders. Source: Pandolfini's "Chess Openings: Traps and Zaps" (problem modified for clarity).

18. Black to move. Solution ...Qc8! (This saves the extra pawn. If Qxe7 f6! and there is no good answer to the threat of ...Rf7 trapping the queen.) This problem tests for indirect threats and for recognition of trapped pieces. Source: Livshitz's "Test Your Chess IQ Book 2" (problem modified for clarity).

19. White to move. Solution Bg4! (...hxg4 h5 Be2 h6 Bf3+ Kg1 g3 h7 and the pawn will promote). This problem tests for handling of promotion threats. Source: Ross Withey's problem set.

20. White to move. Solution Qxd7! (...Qxd7 Rxf6 and black has no good answer to the threats of discovered check). This problem tests for handling of threats of discovered check. Source: Ross Withey's problem set.

Note that while I refer to what a problem tests for, it is quite possible for an unsophisticated program that does few tests or extensions to perform well on the whole set, if it saves enough time in not doing the testing and extending. Also, while many problems seem to test for the same thing, there are many variations of check, recapture and other extension rules, and different problems test for different algorithms. The principal weakness of the set is its failure to measure positional play. I have attempted to develop a positional set, but so far I have not been satisfied with it.

I have run the set on a few programs, with the following results. I give the total time in seconds for the set (excluding the worst five times), together with a rating calculated by the following formula: Rating = 3075 - 250 * log (base 10) T, where T is the total time for the fifteen problems remaining after excluding the worst five. This formula is only a first try, based on the rule of thumb that a speed doubling is worth 75 points: after getting data on many programs I'll try to give a more exact one. Results are: Mephisto RISC 362" = 2435, Fidelity Premiere (Vancouver setting) 745" = 2357, Mephisto Berlin 859" = 2342, Mach IV 1352" = 2292, Mach III 3341" = 2194, Mephisto Milano 4171" = 2170, Mach II L.A. 7,800" = 2102, Socrates on 486/50 361.4" = 2436, MChess 1.53 on 486/50 443" = 2413, Zarkov 2.6 on 486/50 501" = 2400, Alpha on 486/50 580.5" = 2384. These are all fairly close to ratings based on actual games, but we'll have to see if this holds true after many models have been tested. I am sure that there will be exceptions: "dumb" programs will get too high a rating from this test, since there is a trade-off between speed and chess knowledge. Sure enough, I ran KnightStalker, which is basically a super fast tactical analyser with minimal positional knowledge, on my 486/50 and it took only 270" for the fifteen problems giving an estimated rating of 2467, nearly a class too high. So I would conclude that the set is only a good predictor of ratings for fairly sophisticated programs with good dynamic evaluation. If I can ever develop a good positional problem set, the two together may predict ratings well. Finally, I must note the danger that in the future programmers may "tune" their programs to score well on my set, in which case the test will overrate such programs.

GAMES

1992 Harvard Cup -- July 11 -- New York -- 25 minutes per side.

White: Grandmaster John Fedorowicz (FIDE 2530, USCF 2641)
Black: "Socrates" running on 486/50 MHz

1 c4 Nc6 2 Nf3 e5 3 Nc3 Nf6 4 g3 Bb4 5 Nd5 Bc5 6 Bg2 o-o 7 o-o d6 8 d3 Nxd5 9 cxd5 Nd4 10 Nd2 (This seems a bit too ambitious) Bg4 11 Re1 Qd7 12 Nc4 f5 13 Bd2 f4 14 b4?? (14 gxf4 looks necessary) fxg3 15 hxg3 Nxe2+ 16 Rxe2 Bxf2+ 17 Rxf2 Bxd1 18 Rxd1 Qg4 (Three minor pieces are normally worth about a queen and pawn, but here black already has two pawns and an attack that will garner several more. White is lost.) 19 Ne3 Qxg3 20 Nf5 Qxd3 21 Bf1 Qa3 22 Bg2 Qxa2 23 Be1 Qb3 24 Ra1 Rae8 25 Rf3 Qb2 26 Bc3 Qc2 27 Bh3 g6 28 White resigned. No one would guess from the game score that white was a Grandmaster!

1992 Harvard Cup -- July 11 -- New York -- 25 minutes per side

White: Grandmaster John Fedorowicz (FIDE 2530, USCF 2641)
Black: Mephisto RISC

1 c4 c6 2 e4 d5 3 exd5 cxd5 4 d4 Nf6 5 Nc3 Nc6 6 Bg5 Qa5 7 Bd2 dxc4 8 Bxc4 Nxd4?? (This loses a piece, but it's a bit deep for a computer to see in a quick game. Correct is 8...e6.) 9 Nb5 Qb6 10 Nxd4! e5 (Only now did Mephisto realize that if 10...Qxd4? 11 Qa4+! Kd8 [11...Bd7? 12 Bxf7+ or 11...Qd7? 12 Bb5 wins] 12 Ba5+ b6 13 Rd1 wins) 11 Nc2? (I think Nd-f3 was better, after which black's compensation for the piece is minimal. Now black gets some play.) Bc5 12 Qe2? (12 Be3 looks clear enough.) Qxb2 13 Rc1 o-o 14 Qd3 Bg4 15 f3? (This leads to real problems.) e4! 16 Qb3 Qxb3 17 Bxb3 exf3 18 gxf3 Rfe8+ 19 Kf1 Bf5 20 Re1 Rad8 (With two pawns, much better development, and much sounder pawn structure, black has full compensation for the "sacrificed" knight.) 21 Rxe8+ Rxe8 22 Ne1 Nh5 (This rather strange looking move deters both h4? and Kg2, which could be answered with ...Nf4+ Bxf4 Rxe1.) 23 Bc4 Rc8 24 Bd3 Rd8 25 Ke2 Re8+ (Black will now be slightly ahead in material, since two pawns are normally a bit better than the exchange) 26 Kd1 Rxe1+ 27 Kxe1 Bxd3 28 Ne2 Bc4 29 Nc1 f5 30 Kd1 Kf7 31 Kc2 Bd5 32 Rf1 Bd6 33 f4 Nf6 34 Nd3 Bc4 35 Rb1 b6 36 Ne5+ Bxe5 37 fxe5 Ne4 38 h4 Nxd2 39 Kxd2 Ke6 40 Re1 h6 41 Rg1 g5 42 hxg5 hxg5 43 Rxg5 Bxa2 44 Rg7 Kxe5 45 Rxa7 Bd5. Due to time pressure subsequent moves were not recorded. Although I would think that white could draw this position with correct play, in the game black gradually advanced his two pawns until white had to lose his rook for a pawn to stop promotion. It was quite remarkable to see RISC win this game from a Grandmaster after losing a knight so early!

Now follow two games from Holland that show just how well a Grandmaster can play at his best against computers, both by the legendary David Bronstein, who once tied a World Championship match with Botvinnik over 40 years ago.

Aegon Man vs. Machine tourney -- May, 1992 -- 40 moves in 2 hours

White: Grandmaster David Bronstein (age 67, FIDE rating 2465)
Black: Heuristic Alpha (on 486/33)

1 e4 e5 2 Nf3 Nc6 3 Bc4 Bc5 4 b4 (Evans' Gambit, very popular in the previous century) Bxb4 5 c3 Ba5 6 d4 exd4 7 o-o Nge7 (Although this is not the main line, it is supposed to equalize) 8 Ng5 d5 9 exd5 Ne5 10 Bb3 (This appears to be a new move. ECO gives both 10 Qxd4 and 10 Re1 as slighlty favoring black.) dxc3 11 Qe2 f6 12 Ne4 Nxd5 13 Ba3 c6 14 Nd6+ Kd7 15 f4 Ng6 16 Bxd5 Qb6+ 17 Kh1 cxd5 18 Nxc3 Bxc3 19 Rab1 Qc6 (Is white's attack worth the bishop and two pawns he has sacrificed? Surely any computer would say black is winning, but the game does not bear this out.) 20 Qd3 d4 21 Nb5 Rd8 22 Nxc3 Qxc3 23 Qb5+ Qc6 24 Qb3 Rh8 (to give the king the escape square d8) 25 Rbc1 Qe6 26 Qc2 Qb6 27 Bc5 Qc6 28 Qb3 Kd8 29 Bxd4 Qe4 30 Qc3 Be6 31 Rfe1 Qd5 32 Rcd1 Ke8 33 Bxf6 Qxd1 34 Rxd1 gxf6 35 Qxf6 Bf7 36 f5 Rg8 (Only now, 38 plies after the piece sacrifice on move 18, is it clear that white has recovered his material plus interest and will win. If we assume, however unlikely, that the intervening moves were flawless, it is clear that such a sacrifice would be too deep for any conceivable computer to calculate. It could only be played by "intuition", which is to say that anyone or anything playing the sac could not be sure of the outcome.) 37 Qd6 Bxa2 38 fxg6 Rxg6 39 Qd7+ Kf8 40 Qxh7 and White soon won. Quite a brilliant game from a very creative player.

Aegon Man vs. Machine tourney -- May, 1992 -- 40 moves in 2 hours

White: Grandmaster David Bronstein
Black: Zarkov on 486/33 MHz

1 d4 Nf6 2 c4 g6 3 Nc3 Bg7 (This, the King's Indian defense, is not very suitable for computers, because it usually leads to closed positions.) 4 e4 d6 5 Mf3 o-o 6 h3 e5 7 d5 c5 (Another move unsuited to computers. The more closed the position, the worse they play, as there are no tactics to calculate.) 8 g4 (The closed center makes this move viable.) Na6 9 Bd3 Nb4 (9...Nc7 to prepare for ...b5 makes more sense) 10 Bb1 Bd7 11 Be3 Qa5 12 a3 Na6 13 Bd3 Qc7 14 Nd2 b6 15 Nf1 Qc8 16 Ng3 Qb8 17 Rg1 Qd8 (Black's totally planless play is typical of computers in blocked positions. White has effortlessly built up a winning position.) 18 Qe2 Rb8 19 Kd2 Nc7 20 f3 Bc8 21 g5 Nfe8 22 h4 Ba6 23 b4 Bb7 24 h5 Qe7 25 Qh2 cxb4 (This only makes things worse.) 26 axb4 Ra8 27 Rh1 Bh8 28 Rag1 Qd7 29 Rg2 Na6 30 Rb1 Qe7 31 Qh4 Qd7 32 Rh2 Rc8 33 Nb5 Ra8 34 Bf1 Qe7 35 Bh3 Nac7 36 Nc3 Ba6 37 b5 Bb7 38 Rbh1 Ng7 39 hxg6 fxg6 40 Qxh7+!! (This would probably be a tough move for most computers to find--it's rather deep.) Kxh7 41 Be6 dis ch Nh5 42 Nxh5 Rg8 43 Nf4+ Kg7 44 Rh7+ Kf8 45 Nxg6+! Ke8 46 Bxg8 Qg7 47 Rxh8 Kd7 48 R1h7 and black resigned (if 48...Rxg8 49 Rxg8! Qxh7 50 Nf8+ wins). I must admit that I included this game primarily for the lovely queen sac on move 40--the rest of the game was quite one-sided.

Now for an Aegon game in which a standard commercial model draws with the tournament's top rated Grandmaster:

Aegon Man vs. Machine tourney -- May, 1992 -- 40 moves in 2 hours

White: Mephisto Vancouver 32 bit (68020)
Black: Grandmaster John Nunn (2615 FIDE)

1 e4 c5 2 Nf3 Nc6 3 d4 cxd4 4 Nxd4 e5 5 Nb5 d6 6 c4 Be7 7 N1c3 a6 8 Na3 Nf6 9 Be2 o-o 10 Be3 Be6 11 o-o h6 12 Nc2 Rc8 13 b3 Ne8 14 Qd2 Bg5 (to exchange bad bishop for good bishop) 15 Bxg5 Qxg5 16 Qxg5 hxg5 17 Rad1 g6 18 Rd2 Kg7 19 Rfd1 f6 20 Nd5 Bxd5 21 Rxd5 f5 22 f3 Ne7 23 R5d2 Kf6 24 Ne3 f4 25 Ng4+ Kg7 26 b4 b6 27 c5 bxc5 28 Bxa6 Ra8 29 Bb7 Rb8 30 bxc5 Rxb7 31 cxd6 Nc6 32 d7 Nf6 33 Nxf6 Rxf6 34 d8(Q) Nxd8 35 Rxd8 Ra6 36 Rad7+ Rxd7 37 Rxd7+ and the game was eventually drawn, white's extra pawn here being insufficient for victory.

Open Tournament in Regensburg -- June 1992 -- game/1 hour

White: Mephisto Vancouver 68030 60 MHz
Black: Grandmaster Jorg Hickl (FIDE 2515)

1 c4 e5 2 Nc3 Nf6 3 Nf3 d6 4 d4 Nbd7 (the Old Indian defense by transposition) 5 Bg5 c6 6 e3 Be7 7 Be2 Qc7 8 o- o o-o 9 Qc2 Re8 10 Rad1 Bf8 11 dxe5 dxe5 12 a3 a5 13 Bh4 g6 14 Rd2 Bg7 15 b4 axb4 a6 axb4 Nf8 17 Rfd1 Bf5 18 Qb3 b6? (This allows white to remove the defender of the key d5 square) 19 b5! Ne4 20 Nxe4 Bxe4 21 Ng5 Bf5 22 c5! (The threat of Bc4 next is very difficult to meet.) Re7 23 Nxh7 Be6 24 Qc3 Kxh7 25 cxb6 Qxb6 26 Bxe7 cxb5 27 Qb4 and White won. A very nice positional/tactical win for Mephisto.

Now It Can Be Told

by Steven Schwartz

I think I would never have made this story public if the chess computer industry had not been turned inside out these past two years.

As indicated elsewhere in this issue by Larry, Excalibur is a company that consists almost entirely of people who used to work at Fidelity. Fidelity is owned and controlled by its former arch enemy, Mephisto The programmers who were responsible for every sophisticated program marketed by Fidelity are now working for Saitek, and the company that distributed Novag in the last year (having taken that job over from Fidelity no less) has stopped doing so. You can't even tell the players any more if you DO have a scorecard, and that is just on the surface.

Below the surface are the manufacturers in Hong Kong and China that create many of the machines that are part of our industry. Some of these entities go in and out of bankruptcies more than our very own U.S. air carriers.

Nevertheless, getting back to the story. Some of you who have been following computer chess for the last decade or so are familiar with and probably even may own a rather nice and inexpensive little chess computer called the Excellence.

The year was 1985 and Fidelity began touting the little bugger to its distributors and retailers just as the year began - cautioning all along that it would not become commercially available until the August/September time frame. Everything that Fidelity claimed about the "revolutionary" new computer seemed believable. After all, even back then it was not so unusual for a chess computer to play above the 2000 rating level.

What WAS unbelievable, however, to us at I.C.D. at least, was that Fidelity said THIS chess computer was going to SELL FOR UNDER $100 !!!!

Why such skepticism you ask. Well, the immediate predecessor to the Excellence was a machine named the Sensory Challenger 9, a unit which was unanimously believed to play at an 1800 level and cost the consumer about $170, so how was it that six months later Fidelity could introduce a machine selling for close to half the price and playing 200 points better! When I.C.D. posed the above concerns to Fidelity in early 1985, we were assured that the Excellence was a technological breakthrough and that we would receive samples of the unit for testing purposes so that we could, in good faith, promote the product as playing "over 2000".

Frankly, having been inundated by exaggerated manufacturer's claims (certainly not limited to just Fidelity - see some of my earlier "Pity the Poor Computer Chess Buyer" articles in earlier Reports) for years prior to the Excellence introduction, we were not inclined to believe the ratings estimates that Fidelity was spewing forth.

In February of 1985, we received a visit from the President and National Sales Manager of Fidelity for the express purpose of promoting the coming introduction of the Excellence. Further hoopla took place in June at the Chicago Consumer Electronics Show. Here Fidelity at their booth showed to the trade (distributors and retailers) the Excel-

lence once again. And again made the claim of "over 2000" playing strength. I.C.D. once again made it clear to Fidelity that they would have to prove such claims before I.C.D. would associate itself with such a claim. Once again promises of forthcoming test units were made.

Events began to heat up substantially when an ad for the Excellence appeared from the U.S. Chess Federation in the month of May. Claims of strength approaching 2000 were made in the ad, and when we saw the ad, we called both Fidelity and the U.S.C.F. to find out what proof existed of the claim especially since no computers were yet manufactured. The answer from the Federation was that "Fidelity told us it played that well"; Fidelity's answer was "it will play that well". Nothing terribly scientific was done by anyone to validate these claims.

Now the pressure was on. People reading Chess Life were, for the first time, being "informed" that a new product, the Excellence, was on the way, and one could buy a close to 2000 rated unit for $99. Yes, it was an advertisement, but it was a Chess Federation advertisement and to some people that was as good as if the Almighty, himself, had ordained it. The fact that they did not have the product, had never seen the product, had never played the product, and did not know anything about the program in the product, was unimportant. The Chess Federation said 2000 so it WAS 2000.

I.C.D. received loads of phone calls from the chess playing public who were less likely to follow blindly what the advertisement was promoting (after all, they were SELLING weren't they?). Our answer, was that we were highly skeptical, and our recommendation was for everyone to wait until proper testing had taken place. We think the great majority heeded our advice.

When the deadline for the Chess Life issue coming out in June arrived, I.C.D. decided it was time to promote the Excellence because even if it only played 1700, it was still the least expensive unit to ever do so, and therefore was likely to be a best seller.

We put an ad in that issue (still continuing to request samples of the Excellence for testing from Fidelity and still not receiving any) proclaiming that I.C.D. would guaranty that the unit would play "Over 1800 for Under $100". Since the machine had a limited profit margin, we chose to have the Excellence ad share a page with Scisys (now Saitek) TurboStar which we proclaimed played "Over 2000 for under $200. We again ran the same ad to appear in the month of July.

As each ad showed, we received calls both from customers wanting to order the product, and others wanting to know why our ads were proclaiming a rating 200 points lower than the Federation's claim. Our answer: "the Excellence has not been made available to anyone as of the time the ads were submitted and the Federation chose to believe the manufacturer and we chose not to."

The deadline for the issue appearing in August was fast approaching, and I.C.D. chose, once again, to submit the same "1800" ad, but about two weeks after our ad deadline for that issue, we got wind of a very interesting piece of news. Fidelity had entered a unit at the U.S. Open in Florida that it claimed was the Excellence. It was entered for the purpose of receiving a rating.

This was a real curiosity for I.C.D. for three reasons. The first curiosity was that Fidelity never informed us that it was doing this (after all, we were their biggest and best customer); the second was that if they could find their way clear to produce 8 machines for this tournament, why couldn't they create 9 of them and send one to us for testing; the third was that they were SELLING MACHINES DIRECTLY TO THE PUBLIC - hundreds of machines right there being sold to end users at THE VERY SAME TIME I.C.D. WAS BEING TOLD THAT IT COULD NOT RECEIVE EVEN ONE UNIT FOR TESTING!!!!! Pretty weird, eh!?

As the tournament went on, we were receiving daily reports from a customer, who every morning would call us and relate the results of the night before, and we were were so disparaged by Fidelity's inability or unwillingness to supply us with test Excellences that we had him buy units at the tournament and ship them up to us. More weirdness!

Nevertheless, as the tournament progressed through the fourth and fifth day, we learned two very interesting facts. First, the units performing there were not doing terribly well. After the first five rounds, they had a provisional rating of about 1900, but more importantly, due to some truly sleek detective work on his part, we found out something that it appears Fidelity really did not want anyone to know: the units performing at the tournament were operating at 8 megahertz not the 3 megahertz of the commercially available units!!!!!

As the story goes, when the person who was guarding the tournament machines with his life, had to go to the mens' room, he unknowingly asked our customer to watch over the Excellences for him. The customer, knowing what we know about faster units playing stronger than slower units, ran a mating problem on one of the tournament machines, and it solved the problem 2.67 times faster than the units being sold to the public at the tournament!

We could now use this information to conclude that the commercially available units were not even the 1900 that the tournament units were proving to be, but about 1725 because they were running at a much slower speed.

Having now realized that even our "Over 1800" ad was perhaps misleading, when Chess Life called us that day to discuss some other issue, we requested that our ad (which had been submitted some three weeks earlier) be changed to reflect our newly found degradation. The discombobulated Chess Life representative agreed that they would change the ad to reflect a new I.C.D. guaranty that the Excellence would play "Over 1725".

One week before that "Over 1725" issue was mailed to the readers of Chess Life, I.C.D. received a letter from Fidelity indicating that it understood that I.C.D. was going to run an ad denigrating its new Excellence, and such a denigration would be so damaging to the product that Fidelity would stand to lose millions of dollars in sales. Well, since it was too late to stop the publication of the ad - since the issue was already printed, and due to the fact that the games played at the U.S. Open had borne out our estimate of 1725 or something not too much higher, we did not feel any urgency in caving in and promising a 2000 rating (which the Federation pretty much continued to do throughout this entire process).

Lo and behold, the ad appeared and so did a lawsuit from Fidelity claiming damages of approximately 1.5 million dollars as a result of our ad. Interestingly enough, it has always amazed us that our one ad which had not even been in the hands of the readers for more than 10 days was responsible, according to Fidelity, for all of that damage, not to mention the fact that Chess Life was only distributed to about 45,000 people and even if all of them were turned off by our ad, Fidelity would not have lost such a large amount of money.

However, this is America, and in America anyone can sue anyone for anything.

I.C.D. stopped buying product from Fidelity and the two companies were not on speaking terms for about two years until both realized that it was to the economic benefit of both to go back to business as it had been before the incident, but the situation moved inexorably toward trial with depositions taken from all concerned including just about everyone from the Federation. And to this date they have not divulged how it was that Fidelity knew about I.C.D.'s "Over 1725" ad before it was even released from the printer. Nor has it been adequately explained why ads from the Federation continued to boast the 2000 rating and "Class A or better" despite evidence to the contrary.

To make a very, very long story reasonably short, the trial date kept being put back for one reason or another. Perhaps the federal judge in Fort Lauderdale, Florida was of the opinion that his drug and murder trials took precedent over our case. How silly!

After 6 years of preparation, the trial took place. It lasted 3 1/2 weeks. There were three lawyers for each side, and we have been told that the bill for I.C.D.'s lawyers alone over the six years and 3 1/2 weeks was over $500,000. If one were to add this to the bill for the Fidelity legal staff plus the money that the U.S. spent on the judge, courtroom, bailiff, stenographer, court officers, jurors, etc., it is likely that well over $1,000,000 was spent in total.

There were about 15 witnesses as well as a dozen or so depositions read at the trial. There were dozens of displays, exhibits, charts and hours and hours of testimony from all involved including a rather long cameo appearance from Larry Kaufman who was called upon as an expert. And the result?

Well, after both sides had their closing arguments, the jury left to deliberate the fate of the issue. Forty-five minutes later they returned with a verdict - ICD was NOT guilty.

20/20 hindsight is wonderful. Now after 7 years and 1000's of games, Excellence 3 MHz might possibly be an 1850-1900 performer, but in early 1985, I.C.D., I am proud to say, went to extraordinary lengths to uncover the "truth" only to be rewarded with an expensive and time consuming suit.

So you thought the Chess Computer business was boring. Well, take it from one who has been immersed in it for 15 years, things may be calm on the surface, but there is ALWAYS something going on beneath - even now, but I will save that for some future issue.

Computer Go Reports

by Milton N. Bradley (1 Dan)

As promised in the last issue, this report features the results of my head-to-head tests of the three major computer Go software packages: The MANY FACES OF GO, NEMESIS, and STAR OF POLAND. Unchanged from the last time is the fact that only NEMESIS and MANY FACES OF GO have issued the promised updates of their DOS program versions, so I've reluctantly had to proceed under that limitation.

As noted in my first report, the MANY FACES OF GO and NEMESIS are more or less full-featured display/tutorial/playing packages, while STAR OF POLAND offers only monochrome display, some cryptic encoded comments, and no tutorial. All three programs are nicely menu driven and usually function smoothly, although NEMESIS apparently still contains some highly annoying "bugs" (see below). Despite the improvements made in their latest versions, all still suffer from the same significant inadequacies noted in my first report. Most important among these is in the absolutely vital area of eyespace/eyeshape and accompanying life-and-death fights. To a greater or (slightly) lesser degree they all alow their fairly reasonable fuseki (full board opening) positions to be gratuitously cut apart, then surrounded and destroyed one-by-one when they could easily live. This critical flaw results in games that are quite unlike those of human players at about the same 13 kyu skill level.

Typically, one program will attain an overwhelming advantage and then gratuitously allow it to be eroded move-by-move until the opponent may even achieve a lead. Then, this process may or may not again be reversed with no apparent rhyme or reason. In large measure this seems to be a result of a lack of ability to correctly judge the life-or-death status of opposing groups while their borders are still only partially resolved, although the programs apparent lack of memory of what's ensued seems to also contribute significantly to this vital defect. What this means is that all three programs seem to view each board situation as unique, instead of recognizing it as a logical development from its last scan which requires only an update to take care of the implications of the opponent's last move. This often results in failure to make the logical followup that even the average human beginner would almost invariably find, and frequently causes these programs to stagger unpredictably from one area of the board to another.

The tactical skill of all three programs is also still only primitive, with the result that their handling of life-and-death fights is particularly abysmal. In some cases, instead of bringing their own threatened groups to life these programs act in a manner that chess players would recognize as analogous to a "help mate", leadin to totally gratuitous death instead.

The bottom line in all of this is that I don't believe that the differences in playing strength between these programs as they are presently constituted should be your most significant selection criterion. Rather, I believe that the choice should depend upon your perception of the pleasantness (or lack thereof) of the playing ex-

perience each provides. In this context, the following facts are the most significant to me:

1. MANY FACES OF GO has the best graphics by far (in color VGA these are stunningly beautiful), but plays so painfully slowly as to require a 486 if you wish to finish a game at anything approaching its higher playing levels in any reasonable amount of time.

2. STAR OF POLAND plays the fastest and best by far, but offers only Mono graphics.

3. NEMESIS offers a middle ground, having reasonable color graphics and moderate playing speed, coupled with the most complete array of features. On the down side, the presence of "bugs" which can crash your system and require a reboot is a highly annoying problem which strongly downgrades this program for me.

The head-to-head results were obtained by playing two games between each pair of programs at their playing level closest to a 2 hour time limit, one game with black and the other with white. The outcomes were as follows:

1. STAR OF POLAND defeated NEMESIS by about 65 points in each game. However, this was not so much because it was stronger but because the gratuituos dumb mistakes that it made were somewhat less devastating. Given the many observed flaws in the "thinking" of each of these programs, whether or not the same result would obtain over a long series of games between the two is uncertain, at best. Notwithstanding, I personally prefer STAR OF POLAND as an opponent even though it certainly earns no raves on that account.

2. STAR OF POLAND defeated MFGO by about 35 points in each games, again for the same reasons given above. However, it did this while using only 10% of the "thinking" time required by MFGO!

3. In the first game, MFGO defeated NEMESIS by an astonishing 150 points, but didn't recognize the game's end until long after NEMESIS had passed. This outcome obtained because all of the really gross errors were made by NEMESIS, resulting in each of its seemingly secure groups gratuitously dying one after the other. In the second game, I made an error in entering one of MFGO's moves, and when I invoked the NEMESIS "unmove" feature to correct it the program produced an error message citing "Bug 2344"! All that was then possible was to save the game, and when I tried to continue it the system crashed comlpetely and locked out the keyboard so that I had to reboot.

The bottom line in all of this is that if you insist upon stunningly beautiful color graphics, choose MFGO. If you prefer the absolute highest in playing strength currently available coupled with the fastest response time, choose STAR OF POLAND. If you want the most features, choose NEMESIS.

These programs all play a recognizable, but not yet truly competent game of Go, and especially for isolated beginning players are better than no opponent at all. But if you use any of them and want to avoid falling into the trap of learning many things "that ain't so" and which will later have to be unlearned, it is essential that you use a competent primer to teach you the rudiments, and then spend some study time on tesuji (optimal tactical plays) and Tsume Go (life-and-death) problems, because these are these programs areas of greatest deficiency, and the ones in which they can't teach even a rank begenniner anything substantive.

To learn how to play this greatest of all the world's strategic board gaems, I must (blushingly) recommend my own "THE BEGINNER'S GUIDE TO THE GAME OF GO", available through ICD, which has just been selected as the new official course text for the only full credit Go course at an American University - Dr. Dave Weimer's at the University of Rochester, NY. If you haven't yet experienced the vast scope, incisive tactics and truly profound strategy of Go, as the old commercial used to say, "Try it, you'll like it!". I, too, was once a strong, dedicated chessplayer who didn't believe that any other game could compare, but I've never been sorry that I investigated Go, nor will you be. Remember, former World Chess Champion Emmanual Lasker said "If intelligent extra-terrestrial life is ever discovered perhaps they will play chess, but certainly they will play Go!". You owe it to yourself to discover why.

Who is Larry?

IM Larry Kaufman is, of course, the driving force behind Computer Chess Reports. But maybe you didn't know a few things about him. For example, did you know Larry was the American Open Champion in 1966 with a peak rating of 2512? He was born on November 15, 1947 and lived in Washington DC until 1975, at which point he moved to Florida, where he still lives. He graduated M.I.T. in 1968 after majoring in economics. While at M.I.T., Larry worked on "MacHack", the first chess program ever to compete in tournaments against humans. In 1980, Larry achieved the coveted title of International Master. Software is another of his fields. He and Don Dailey programmed the extremely successful Rexchess, and recently completed Socrates (to be renamed upon release), which has been sold to a major software firm, Titan, to be released through chess retailers shortly, and Alpha, for release in the not-so-distant future. Presently, Larry can be found at Fidelity Electronics on Wednesdays.

Larry also happens to be the strongest non-Japanese Shogi player in the world, and one of his games is printed in Ishi Press' Shogi for Beginners. Larry's Go games can be found reprinted in RANKA yearbooks and Ishi Press' Chinese Chess for beginners sums it up with "Larry Kaufman, an international chess master living in Miami, Florida, with a chess rating of around 2450, became quite a reasonable player of Chinese Chess in just a few months time in 1985, but then abruptly gave it up to concentrate on computer chess, with respect to which he is now one of the world's leading authorities."