

Eric Hallsworth, The Red House, 46 High St. Wilburton, Cambs CB6 3RA



Computer Chess News Sheet 34

"SELECTIVE SEARCH"

Jun-Jul 1991

The purpose in publishing SELECTIVE SEARCH (previously known as the NEWS SHEET) has always been to provide a survey of the CHESS COMPUTER scene, with a special emphasis on realistic assessments of the PLAYING ABILITIES of the many machines now available. My work at COUNTRYWIDE COMPUTERS is of special help in this as they provide financial backing and also allow me some time during office hours in which to prepare part of the material. We handle there a very wide range of Computers and I enjoy freedom to maintain personal opinions and preferences, which I seek to share with readers. Final games and articles selection for each Issue is done independently and solely by myself.

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ARTICLES: Articles or Games sent in by Readers, Distributors or Programmers are always welcome and will receive fair consideration for publication.

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Welcome to another **VERY FULL**, 24 page Issue! And thanks for all the help from Contributors whose involvement makes the Magazine so much more interesting. Articles already in preparation for the **NEXT ISSUE** include: **TURBO KING 2** - a nice and useful improvement!...**LYON 68020** to get a **20MHz** version! (£2295)...**LYON 68020/12** gets a **2285** grade in the North of England International...**ENDGAME STUDY**...**RATINGS**...and all the other **REGULARS.** **STOP PRESS:** **WORLD MICRO RESULT** from **Vancouver!**!...**Ed Schroeder** and **Richard Lang** **SHARE** the Title for 1991...**M CHESS** on an **80486/33** comes **2nd**...The **Spracklons** were there but came a "lucky" fifth!

2.

RESULTS and GAMES

From FRANK HOLT

Frank has been testing his new Naphisto LYON 32 to compare its results against the Novag SUPER FORTE B/6 with those of his PORTOROSE predecessor. 2 GAMES were played on each of four LEVELS: 3m per move, 2m per move, 1m per move and 30s per move. The scores, which show a definite improvement, are as follows:-

	<u>Solid</u>	<u>Active</u>	<u>Risky</u>	<u>Total</u>
PORTOROSE	4-2=2	6-2=0	3-2=3	13-6=5 i.o. 15½-0½
LYON	6-0=2	6-1=1	7-0=1	19-1=4 i.o. 21 -3

So the PORTOROSE did best on Active, followed by Solid; whilst LYON did best on Risky, followed by Solid. However the results total shows a clear step forward.

Last year readers may remember that quite a few folk felt that Solid style had the edge over Active - though not by much - and it was an opinion which lost some supporters after a clearly better performance on Active at the KINGS HEAD Tournament. Of course 8 games per style is nothing like enough to start such a topic off all over again, so I was more than interested to note the following figures given by Freddy Wang of Norway:-

LYON 68020 Active, Blitz v. 1900 (Norway), 27-3 for a 2266 grade
LYON 68020 Risky, Blitz v. 1900 (Norway), 22-2 for a 2295 grade
LYON 68020 Risky, Blitz v. 2170 (Norway), 32-9 for a 2390 grade

Continuing on the subject of BLITZ Chess, the LYON 68030 has now played yet another series against Michael TAL, the current World Blitz Champion. This will almost certainly have been the final Match, as the separate scores for the 3 Matches read as follows:-

	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Naphisto LYON 68030	4	5	6	= 15
Michael TAL	2	5	2	= 9

So TAL was unable to take any advantage of his "recovery" in the 2nd. Match and, instead of catching the LYON as intended, actually fell back further behind.

From TONY SHERLOCK

Tony and Desmond Taylor, two retired ex-schoolteachers, have just completed a truly MASSIVE testing of their Naphisto ACADEMY (Tony's machine) and Novag SUPER EXPERT C/6. It has taken them some 3 or 4 months, playing a couple of games a week (all at 40moves in 2h!). The results are very interesting, and AGAIN raise questions about different playing styles where machines offer a choice!

3.

When Alastair Cargill and I operated the ACADEMY at the British Championships, we both favoured select 4 (or even 5!) over select 3 as set at switch-on. Views are similar with the POLGAR - but NOT everyone agrees, in particular the programmer, of course! It was therefore very interesting to see Novag alter their SUPER FORTE/EXPERT A (actually select 1, vs8 was select 2), to a select of 3 with the B version, and now 5 with the C.

Tony and Desmond, in fact, decided to play five 20 game Matches using the Novag machine on a range of selects, from 3 to 7, whilst keeping Mephisto on select 3! The results were...

	Novag select 3	4	5	6	7	Total
Novag SUPER EXPERT C/6	10½	11	11½	13	12½	58½
Mephisto ACADEMY (select 3)	9½	9	8½	7	7½	41½

They also tested the first 3 of our TEST YOUR TACTICS positions, again using an interesting range of selects. On these the Novag was clearly the faster; but once more the really INTERESTING thing is that BOTH machines do better on the HIGHER select choices!

Position	[1] sel3	sel5	sel7	[2] sel3	sel5	sel7	[3] sel3	sel5	sel7
Super Expert	4m34	2m56	2m57	1m22	0m41	0m41	0m06	0m07	0m07
Academy	25m23	8m34	3m25	9m43	6m15	5m55	0m14	0m14	0m14

In the course of testing out my own SUPER EXPERT C/6 following its being fitted for use with the Novag SUPER SYSTEM, I timed Position [2] at 2m56 rather than 0m41; but the others appeared the same. This is still faster than the ACADEMY.

Of course NOW it would be interesting to know what would happen if ACADEMY was asked to play at selects 3 to 7, with Novag left on its switch-on choice of 5. We will probably never know! - Tony has changed to the Mephisto LYON, so he and Desmond have just started a new Match LYON v. Novag SUPER EXPERT C/6 with, once more, Novag being tested at a range of selects. I'll pass on the scores as soon as there are enough to be interesting! In the meantime it is obvious that 100 games between these 2 very good opponents are BOUND to result in some fascinating chess, so here are the best ones as chosen by TONY ("four startling games"), with light notes by me.

[1] White Mephisto ACADEMY (sel.3). Black Novag SUPER EXPERT C/6 (sel.7)

The first pair of games show examples of each Computer completely over-running its opponent. In number one, the ACADEMY plays the first 17 moves of the Queens Gambit Accepted in its Book. When it comes out of Book, it evals. at -055 yet, 2 moves later, declares mate in 6!

1.d4 d5 2.c4 dxc 3.Nf3 Nf6 4.e3 e6 5.Bxc4 c5 6.0-0 a6 7.a4 Nc6 8.0e2 cxd

4.

9.Rd1 Be7 10.exd 0-0 11.Nc3 Nd5 12.Bd3 Ncb4 13.Bb1 b6 14. bxa 15.Ne5 Bb7
16.Ne4 Rc8 17.Ra3 Nc6 18.Rh3!

(Okay - so the ACADEMY has caught the Novag in a sort of opening trap. Even so, its finding of this move "under its own steam" is very good).

- Nxd4?

(Certainly not best, and equally not the +080 eval. shown by Black. But neither Nxe5, nor h6 look good enough to stop White gaining the advantage, and 18.- g6 may be best).

19.Qh5!

(Fairly obvious, and White is winning now)

- h6 20.Bxh6!

(The ACADEMY apparently announced mate in 6 with this move. But is it? The moves as sent to me stop here, so I don't know what the Novag reply was and it may have been move 21 which saw the mate announced. Certainly if 20.- Ne2+ there is no mate in 6 but, from testing this position on my own SUPER EXPERT, I believe it almost certainly played 20.- Nf6?? which allows 21.Nxf6+ which is mate in 6! QED!).

Although the Novag actually won the Match when on sel.7, it is probably just too high for most situations, and sel.5 or 6 looks best.

[2] White Novag SUPER EXPERT C/6 (sel.6). Black Mephisto ACADEMY (sel.3)

It was on sel.6 that the Novag go its top Match result - and the following game certainly shows great attacking flair. A Caro Kann.

1.e4 c6 2.d4 d5 3.exd cxd 4.c4 Nf6 5.Nc3 e6 6.Nf3 Be7 7.cxd Nxd5 8.Bd3
Nc6 9.0-0 b6 10.Nxd5 Qxd5 11.Re1 Bb7 12.Be4 Qd6 13.Ne5 0-0 14.Bf4 Rfe8
15.Bxh7+ Kxh7 16.Qh5+ Kg8 17.Qxf7+ Kh7 18.Bh6 Bf6 19.Bxg7 Bxg7 20.Re3

(And Novag here announced mate in 3).

The second pair of games are notable for their astonishing turn-rounds in fortune. In the first it is the ACADEMY which shows itself ahead by around +250 from move 26; and the Novag's recovery from move 41 is amazing chess.

[3] White Novag SUPER EXPERT C/6 (sel.7). Black Mephisto ACADEMY (sel.3)

1.e4 e6 2.d4 d5 3.Nd2 c5 4.Nf3 Nf6 5.e5 Nd7 6.c3 cxd 7.cxd Qb6 8.b3 Bb4
9.Bb2 Nc6 10.a3?

(A strange choice which allows Black to damage the White King position)

- Bxd2 11.Kxd2

(Qxd2 leaves the b3/P unprotected - which is why I queried 10.a3)

- Ne5 12.b4 Nc4+ 13.Bxc4 dxc4 14.Rc1 Qc6 15.Qe2 b5 16.a4 e6

(The a/b/c Pawns have become very strong).

17.Rhe1 Nb6 18.a5 Nd5 19.Bc3 Bb7 20.Rod1 0-0 21.Qf1 Nf4 22.Ne1 Rfc8 23.b4
Rd8 24.f3 Ng6 25.Qe2 Nxb4 26.Kc2 Nf5 27.Kb2 Ne7 28.g4 Nd5 29.Bd2 Rac8
30.Bg5 Re8 31.Ka3 h6
(+278)

32.Bh4 Qd7

(Now was probably the time to push the c/Pawn).

33.Qf2 Kf8 34.Ng2 Qc7 35.Ne3 g5? 36.Bg3 Qe7 37.Nxd5 Bxd5 38.f4 c3
(+237 according to Academy, but more like +120 I think, and this should have
been played earlier).

39.Qh2 Kg7 40.f5! exf 41.gxf Kh7
(+173)

42.f6! Qe6??

(+165? Oops! Qf8 was needed and Black may still have a nominal edge).

43.Rh1!

(Right! LYON shows this move as over +600 immediately, and +863 within 1m)

- Bxb1

(-249?)

44.Rxb1 Qxf6

(-999!)

45.exf6 Kg6...

(How to snatch defeat from the jaws of victory! 1-0).

The final game is the reverse of the above, with the Novag on a small/moderate +
score for most of the game, before it capitulated suddenly.

[4] White Novag SUPER EXPERT C/6 (sel.4). Black Nephiste ACADEMY (sel.3)

1.e4 c6 2.c4 d5 3.exd cxd 4.d4 Nf6 5.Nc3 e6 6.Nf3 Be7 7.cxd Nxd5 8.Bd3
Nc6 9.0-0 b6 10.Qa4 Bb7 11.Ne5 Nb4 12.Be4 Rc8 13.a3 f5 14.axb4 fxg4
15.Be3 a6 16.Nxc6 Rxc6
(-058).

17.Nxe4?

(Novag misses a chance to play the good looking 17.b5 here)

- 0-0 18.b5

6.

(A move too late now that Black has castled)

- Rc8 19.f3 a5 20.Rfc1 Qd7 21.Kh1 Rxc1 22.Rxc1 Rf5 23.Nc3 Qd6
(-027).

24.d5 exd 25.Qxb6 Bxb2!
(+014)

26.Qxa5 Rh5
(+063)

27.Rd1 Qe6!
(Excellent move, and worth much more than the +127 evaluation which accompanied it).

28.Nxd5 Bxd5
(+634, and Novag resigned. 0-1).

Games like these would be extremely suitable for little quiz questions - not for prizes (of course!), but to make sure you are playing through the games! For example in the last one [4], "What was White's main losing mistake? And what should he have played to stay in the game?" Or perhaps I could offer a subscription extension of ONE WHOLE ISSUE for every correct answer received! No - that would be going too far. Perhaps I could pop all the answers in a hat, and give a YEAR'S SUBSCRIPTION to the first one opened!

Why not?! I can afford that! So: answers must REACH us on or before 1 July 1991.

Adverts

WANTED! BORCHEK DRAUGHTS program for GGM/MGS, by Tony Leech, Flat 3, 17 Alumhurst Road, Westbourne, Bournemouth, Dorset BH4 8EL

FOR SALE. Nephisto EXCLUSIVE POLGAR, purchased 9/1990. In excellent condition complete with manuals etc. Superb multi-featured chess computer, infinite levels, incredibly even key-in your own rating to have a partner playing at the strength YOU want! £390 ono. Call Brian Kennedy on 081 997 2724, evenings.

PC SOFTWARE for IBM and Compatibles only. PUBLIC DOMAIN versions of Psion 1, Cyrus Chess and EdChess. FREE, but SEND 5½" or 3½" DISK in STIFF ENVELOPE with a note of YOUR address to Alastair Scott, 111 High Road, Byfleet, Surrey KT14 7RB. He will copy them onto your disk with a batch file to de-arc them to your C: hard disk, and instructions "how to do it". ("It's easy" - Eric).

ENDGAME CORNER by Graham White

7.

This extraordinary ending occurred at the end of an interesting game in one of my test series between Mephisto LYON 68020 and Fidelity NACT 3 - 1min per move.

Mephisto LYON is White.

1.Kf2 g5!?

A risky move which forces White into the following complex ending. After the solid 1.- Nc6, Black might even be better.

2.Rxe6 Rxe6 3.fxg Kf7!?

The King regroups to g6 to act as sentry against the White Pawns. Possible was 3.- Ng6, and a continuation could be 4.h4 f4 5.h5 Ne5 6.gf Nd3+ 7.Re3 Nb2 8.h6. This is too dangerous for Black so, instead, 4.- fg+ looks better, though unclear.

E.g. 5.Kg3 Ne5 6.d4 Nd3 7.g6 cd 8.h6 Kf6 9.h7 Kg7 10.cd Nb2 11.Kf4 Nc4 12.Kf5 Ne3+ 13.Ke4 Nc4 14.Kd5 Ne3+ 15.Kd6 Nf5+ 16.Kc7 Nd4 17.Kb7 a5 18.Kb6 a4 19.Ka5 a3 20.Kb4 Nf3 21.Ka3 Ne5 22.Kb4 Ng6 23.a4 Ne5 24.Kb5 Nd7 25.a5 Nb8 26.Kb6 Kh7, is a draw! This is just a sample of the many possible chaotic lines, and is NOT definitely the "best" line! E.g. perhaps 9.g7 is better than h7 for these types of races. Also 13.Ke6 may well be better than Ke4; but you can see the idea!

4.Kf3 Kg6

4.- Nd5 would probably transpose.

5.h4 Nd5 6.a3!?

Preparing 7.c4 which would otherwise have been answered by - Nb4. An alternative was simply 6.d4 cd 7.cd with approaching mutual zugzwang. After 7.- Kh5, I think it should be a draw again.

6.- Kh5 7.c4 Ne7 8.Kf4 b6 9.b4!?

Creating sheer chaos as passed Pawns tear up and down the board everywhere!

9.- cxb 10.axb a5!

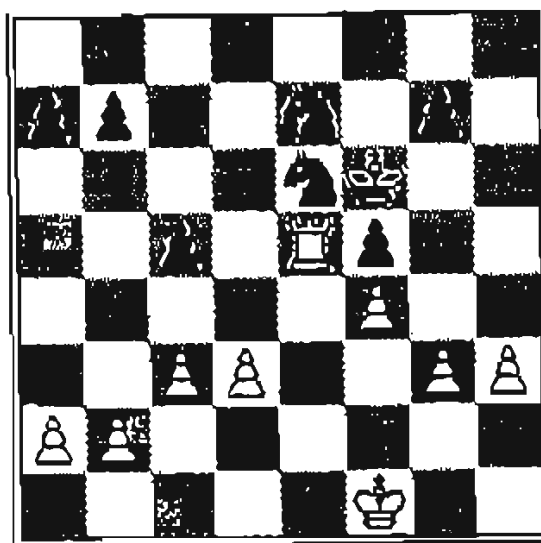
This is Black's counter-play.

11.bxa bxa 12.Ke5

Of course the White King must get inside the "square" of the a/Pawn to stop it. He might have preferred to play 12.Ke3 instead in order not to block his d/Pawn. The disadvantage would be that an eventual f4 by Black would give check, gaining a tempo. Let's have a look! 12.Ke3 Kg4 13.d4 (despite being furthest back, this is the best Pawn to push as it kicks the Knight after d4-5-6). 13.- Kg3 14.d5 f4+ 15.Kd2! Nf5! (this is another good square). 16.h5 (or 16.c5) - f3 17.h6 f2 18.h7 f1=Q 19.h8=Q, but Black looks to be winning. Note Black must now avoid 19.- Qc4? 20.Qc3+! and White swindles a draw when the a/Pawn drops!

12.- a4 13.Kd4 Kg4 14.Kc3

If 14.c5 Kg3 15.h5 f4 16.h6 f3 17.h7 Ng6 18.c6, Black wins by - a3! 19.Kc3 a2 20.Kb2 f2



8.

14.- Rxf3 15.d4 f4?

The first of two moves turning a win to defeat. 15.- Kh4 would still be winning.
16.d5 a3??

A complete waste of a vital tempo. Even 16.- f3 17.d6 Nc6 18.g6 f2 19.g7 fl=Q
20.g8=Q Kh4 is no easy win for Black - in fact an exchange of the Queens will
result in a draw, so I do not think White would have lost now anyway.

17.d6

After Black's gross blunder it is White who is now winning.

17.- Nc6 18.g6 a2 19.Kb2 Ne5 20.g7 Nxc4+ 21.Kxa2 Nxd6 22.g8=Q+

And White does win since, if 22.- Kxh4? 23.Qd8+! A very complex ending which
Mephisto needed some luck to win.

I now reversed colours to see what would happen on the same levels, with MACH 3
as White. The play was equally exciting after:-

1.Kf2 g5 2.Rxe6 Kxe6 3.fxf3 Kf7 4.Kf3 (as before) - Nd5 5.d4

This idea was mentioned in the previous game.

5.- Kg6 6.h4 cxd 7.cxd Kh5

We have entered a line which I predicted would be a draw. Let's see!

8.a4 b6!

This will prove to be correct much later.

9.Kf2??!

He probably should hide his time with 9.b3! and force Black to make another Pawn
move - a method which might well have secured a draw. But now Mephisto will play
for the win with the Black pieces.

9.- f4! 10.Kf3

10.gf Nf4 11.Kf3 Ng6 12.Re4 Nh4 13.d5 Kg5 14.d6 Kf6 15.Kd5 Nf3 16.Kc6 Ke6 17.Kb7
Kd6 18.Ka7 Kc7 is also not quite good for White, e.g. If 19.a5 then b5! wins.

10.- fxf3 11.Kxf3 Ne7 12.Kh3?!

It would be better for White to activate the King via f4. E.g. 12.Kf4 Kh4 13.g6!
Ng6 14.Kf5 Nf8 15.d5 Kg3 16.d6 Kf3 17.Kf6 Ke4 18.Re7 Kd5 19.d7 Nd7 20.Kd7 Kc5
21.Kc7 Kb4 22.Kb7 - a dead draw. So maybe my prediction should have been right!?

12.- Nf5 13.d5 Nzh4 14.d6 Nf3 15.Kg3

Fortunately for Black, after 15.d7, he has Ng5+, and the Pawn can be stopped.

15.- Nxf5 16.Kf4

This time after 16.d7 Ne6 blocks out the King.

16.- Nf7 17.d7 Kg6 18.Ke4 Kf6 19.Kd5 Ke7 20.Kc6 Ne5+

White must try to capture both Black Pawns to draw.

21.Kb7

Now we can see that if Black had been forced to move the a/Pawn earlier on -
e.g. after 9.b3 - then White wouldn't now lose!

21.- Kxd7 22.Kxa7 Kc7

White has come close - but just can't force Black's last Pawn off the board.

23.Ka6 Kc6 24.b4 Nd3! 25.b5+ Kc7

Now if 26.a5 then Nc5+ wins; so 0-1. A very close finish with White missing a
drawing chance at 12, playing Kh3?! instead of Kf4. Two very tense endgames!

TEST YOUR TACTICS

by Graham White

9.

This issue reports the outcome of the testing of the TACTICAL STRENGTH of the **Hephisto LYON 68020** from the authoritative "**CHESS POSITIONS**" by **Alexander**. The book features an examination by which ANYBODY (or thing!) can test their ability in tactics and compare their results with those of the strongest British players at the time of the books' original publication.

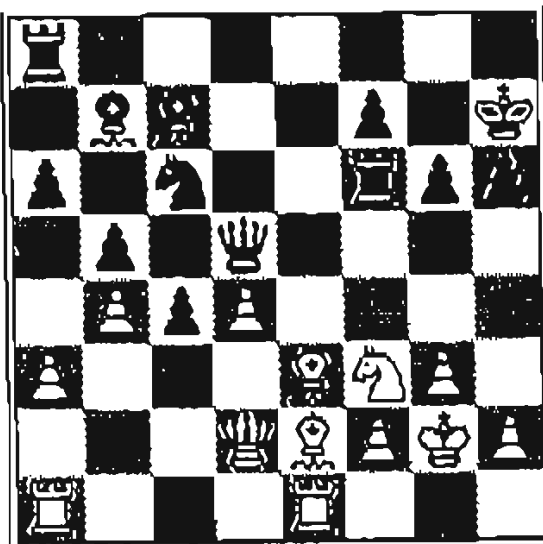
For comparison some scores for leading players out of 1020 were:-

Bill Hartston	906
Ray Keene	851
Jonathan Penrose	838
Andrew Whiteley	771
Jana Hartston	729

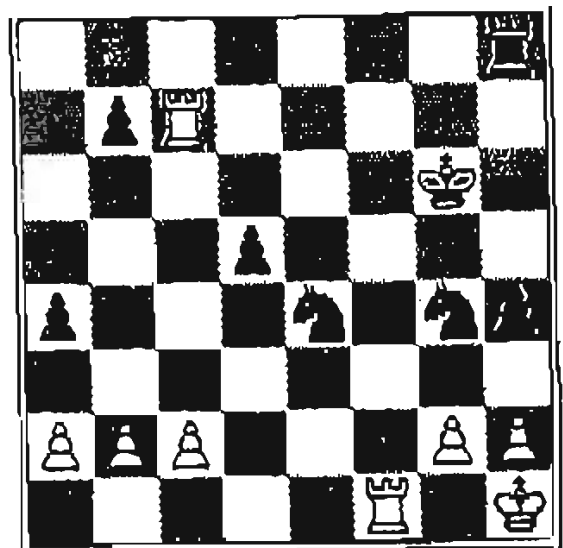
I had already tested my **Hephisto PORTOROSE 68020**, which obtained a very good score of 780.

Before giving the LYON's score, I would say that this sort of test should heavily favour humans who KNOW there is a tactical sequence to be found before they start. Also some of the positions are well known and will already be familiar to top players (one of the positions was from one of Ray Keene's own games!). In this light LYON's score of 873 was tremendous, and is more evidence of its clearly improved ability in this area of its play. It was the only "pupil" to score 100% (!) on the relatively less difficult first test series, and tied Bill Hartston's score in the second. However it dropped short of the latter's winning score of 906 only after failing the last 2 positions of the final test. Even so, it still outscored all the others, including Jonathan Penrose - a ten times British Champion - on the full test!

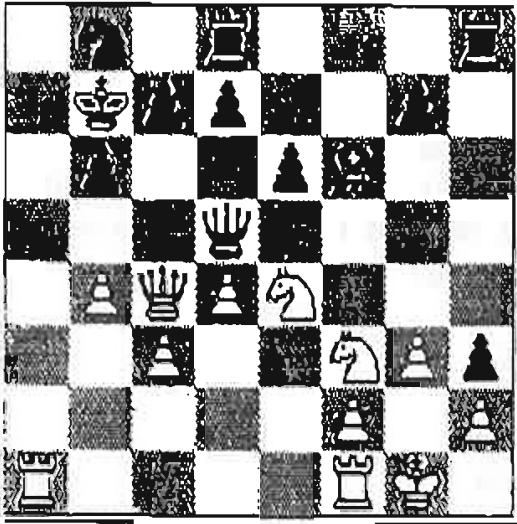
Here is a small selection of some of the very interesting positions:



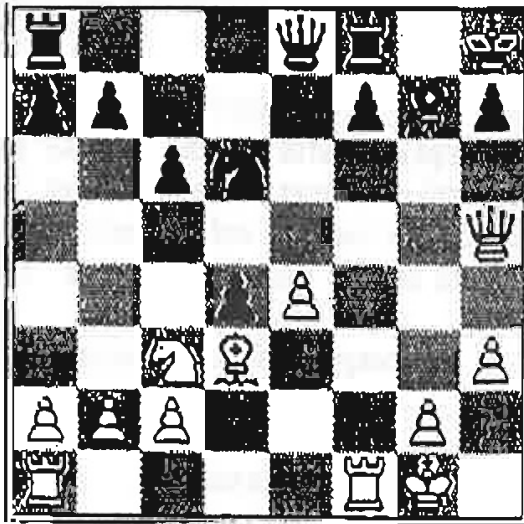
Black to play



Black to play



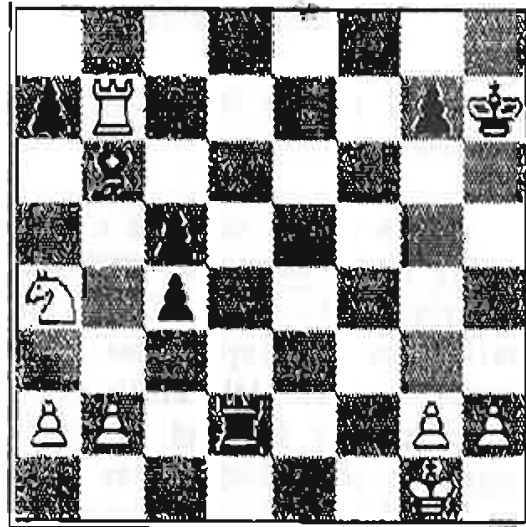
White to play



White to play

As usual, if you wish to try out your own Computer on these positions, the best setting to use is INFINITE.

Whilst a couple of the positions do lead to mate, the best test of the machine is on Infinite, where it will be analysing in exactly the same way as it would in a game. In this way you can find out what the chances would be of your Computer finding the winning move "over the board".



Black to play

RESULT just in from MODUL Mag

In an article headed "PC POWER" extolling the virtues of the current crop of PC Programs, especially *M CHESS* and *REX*, the following Tournament Table appears. The success of *PSION* over *REX* is a surprise - but they do come 1 and 2!

	Psi	Rex	SFC	Rom	Mc3	MN5	2100	Reb	TRK	MM2	
1 PSION 2 80386/PC	**	1½	2	1	1	2	1½	1	2	1½	= 13½
2 REX 80386/PC	½	**	1½	1	1½	1½	1½	1½	1	2	= 12
3 Novag SUPER FORTE	0	½	**	1½	1½	2	1	1½	1	2	= 11
Neph ROMA 68000	1	1	½	**	1½	0	1½	2	1½	2	= 11
5 Fid MACH 3	1	½	½	½	**	1½	1	2	2	1	= 10
6 Nephisto MM5	0	½	0	2	½	**	1½	2	1	2	= 9½
7 Fid DESIGNER 2100	½	½	1	½	1	½	**	1	½	1½	= 7
8 Nephisto REBEL	1	½	½	0	0	0	1	**	1½	1½	= 6
Saitek TURBO KING 2	0	1	1	½	0	1	1½	½	**	½	= 6
10 Nephisto MM2	½	0	0	0	1	0	½	½	1½	**	= 4

PROCESSORS and SPEEDS Or: DEDICATED Computers v. PCs and SOFTWARE

11.

The main purpose of this Article is to compare the actual effective speeds, for Chess, of the various processors which can be used. In dedicated machines these are currently the 6301, 6502, 68000/20/30/40; just arriving is the H8 chip, and to come are RISC chips. In personal computers they are 8806/8, 80286/386/486 and the 68000 again. Which are fastest? By how much? Which are the best for chess?

At the outset I wish to make it known how MUCH help I have got from studying LARRY KAUFMAN's work in his Magazine "CHESS COMPUTER REPORTS QUARTERLY". In fact his labours have provided the basis for articles in various other Chess Computer Magazines throughout Europe, so I am not alone in appreciating his input. If there are faults in any of the conclusions presented here, then they will most likely be my responsibility as I have re-worked his figures to provide a slightly different format for comparing the results.

What are MIPS?

As SS Readers know, Chess Computer speeds are usually quoted in MHz. This relates to the rate of the Computers internal clock in millions of cycles per second. This is fine where we are comparing Computers which use the same processor type! We are right to say that, for example, a Mephisto Polgar 10MHz runs exactly twice as fast as a Mephisto Polgar 5MHz, because they are both running on a 6502 processor. But this simple relationship no longer works when we try to compare the Polgar 5MHz with, say, a Mephisto Lyon at 12MHz, or a Fidelity Mach 4 at 20MHz. As we will learn later, the Lyon is not 2.4 times as fast as the Polgar, nor is the Fidelity 4 times as fast!

The reason is simple - the processors in use in the above example are the 6502 (Polgar), the 68000 (Lyon), and the 68020 (Mach 4)... and different processors use different numbers of cycles to complete each instruction. One processor might work slowly but complete a task in only two cycles, whilst another works faster but needs three, four or even more cycles. The 6301 is a good example of an apparently fast processor which needs to finish quite a few cycles per instruction and so is actually somewhat slow in the end!

For chess instructions the difference between the processor requirements for the same instruction can vary from the excellent 2 cycles to a maximum of 19! And even the different instructions also take different numbers of cycles! - but we don't want to get too complicated! To use an "everyday" example it is similar to comparing the number of revs. of a car in 2nd. gear and 4th. gear. To reach 40mph. you need far more revs. in 2nd. gear than you do in 4th! One (2nd. gear) is doing perhaps 6,000 rpm; the other is doing 2,000 rpm... but 2nd. gear is not 3 times as fast at all - not on the road! - there they are exactly the same.

So the more accurate measure is to compare the number of instructions completed per second. (I.e. miles per hour achieved rather than revs. per minute needed to get it done). And so we come to MIPS, for MIPS stands for a Million Instructions Per Sec! And most if not all IBM-type machines which you can buy today, be they an 80286/386 or 486, will have available figures showing not only their MHz, but also their MIPS - what they have achieved in practice in test conditions. But, as

regular readers know by now, it's never quite that straightforward.

And so to CHESS MIPS

A MIPS is a mathematical/speed figure which shows what a Computer or Processor can achieve whilst doing certain jobs covering a range of different but typical Computer activities. A CHESS MIPS is the figure used to show what a Processor can achieve doing a range of Chess activities. This, in most ways, is EXACTLY what we want, and it is therefore the basic unit used in Larry's calculations and articles.

The original IBM 8MHz AT generally rates at 1 MIPS on all standard tests, and is thus defined as 1 CHESS MIPS in Larry's calculations, and all other figures given by him use the 8MHz AT = 1 CHESS MIPS as the standard. Thus a standard IBM pc or xt 8088 at 4.77MHz is found to run at $\frac{1}{2}$ the speed of the 8MHz AT, and so is rated at $\frac{1}{2}$ CHESS MIPS. If this same Computer is running at 9.5MHz, then it achieves $\frac{1}{2}$ CHESS MIPS. An 80286 at 12MHz will be found to run twice as fast as the 8MHz AT, and so is rated at 2 CHESS MIPS.

So it continues and Larry, through much excellent research, has produced relative figures for ALL of the other types of processors currently in use! A massive task well done.

And then there was CHESS MHz!

Yes, I'm going to be a bit naughty. Though, I think, for good reason.

I believe that most SS Readers are comfortable with the concepts of Super Forte 6MHz's, and Polgar 5MHz's etc. I.e. we like and have an understanding of the MHz figure which attaches itself to the well-known 6502 processors. Thus I think we will find it easier if figures for the range of other Processors are related NOT to the IBM AT and therefore CHESS MIPS, but to the much-loved Chess Computer 6502's and therefore CHESS MHz?! Granted the former would probably suit the Computer buff, who is used to the concept of MIPS and "Landmark Speeds". But for us, let's go one step at a time, and coin my new phrase, the CHESS MHz, which we will call CMHz for short.

Thus, for a group of 6502 machines we can say that an Excellence 3MHz is 3CMHz; Par Excellence, Forte B, Polgar/5, Simultano etc. are 5CMHz; Super Forte and Expert/6 are 6CMHz; Renaissance D/10, Polgar/10 are 10CMHz. You see, if we were told that a Fidelity Mach 2C (which is on a 68000 processor at 12MHz) = 2.0 CHESS MIPS, then it might not mean too much - we have said that it is twice as fast as an IBM AT at 8MHz... but how many S/S readers have experience of THAT? But if we learn that it is 6.6CMHz, we have something about which we know a little to relate it to!

So we will proceed on the basis that the CMHz for a 6502 processor Chess Computer is exactly the same as its MHz. The other figures for dedicated Chess Computers then look like this:

DEDICATED Chess Computers

6502. Times 1, our "benchmark", already agreed (by me!). Thus 5MHz = 5CMHz.

6301. Is between 4 and 5 times slower than the 6502 for chess. Divide by 5. Thus 15MHz = 30MHz. Computers such as *Europa*, *Marco Polo*, *Beluga*, *Super VIP*, *Super Nova*, *Cavalier*, *Conquistador* use the 6301.

68000. Though it can, and does run faster than a 6502, the 68000 generally requires slightly more cycles to complete each instruction. So the improvement over the 6502 is not quite as great as appears at first. Do you remember the early disappointment with *Fidelity's Club A* (68000 at 12MHz), the basically re-written *Par Excellence* (6502 at 5MHz), when it was found that the *Club* was only marginally faster?! Now you know why.

However the 68000 has some very valuable advantages over the 6502, provided the programmer takes full advantage of them! Firstly there are no limits on program memory size, so considerably more knowledge can be included and much more capable and sophisticated chess play is possible. On the other hand, if the programmer simply adds line-after-line-after-line of new knowledge, he will only succeed in slowing the program down, and lose much, perhaps all, of the gains made in its chess ability. Speed and Knowledge MUST work hand-in-hand.

Fortunately the programmer has 2 areas which can greatly assist him with the 68000/20/30 series.

-[1] More information per programming line can be entered in a 16 or 32 bit system than in an 8 bit, so the skilful worker can "concatina" his algorithms, trying to turn, say, 4 lines of programming into 3, etc. And..

-[2] it is possible to include Hash Table Memory systems within the 68000 series! This means that the program can retain details of analysis done in memory, and call it up as required. This saves continually re-doing work. This was discussed in an earlier Issue - when we were still called NEWS SHEET - but for those who missed it, the 6301's and 6502's have to re-start at Ply 1 for all moves at the end of each Ply. I.e. When they have completed Ply 1's work, all they can store in their limited memory size is the ORDER of those moves, and the evaluation and analysis for just the main line as a coding for owners who press [Hint] or have Displays. To do Ply 2, they start all over again at the beginning, but USE the order they have set the moves in. At the end of Ply 2, they re-organise the moves again into a new revised order based on the updated evaluations, check their clocks against the level/time control setting and, if there is time for a 3rd. Ply of search, they start all over again from Ply 1, but using the latest candidate move order.

The 68000 series, however, can store completed analysis and then bring it straight back into memory to save much of the same work being continually re-done. Thus the amount of RAM or Hash Table Memory makes a clear difference to the achievable speed. 64K RAM is better than none, but cannot store too much - 1024K makes a BIG difference! - but adds to the computer's cost, of course!

Fidelity Clubs, *Mephisto Amsterdam*, *Dallas*, *Roma* did not use Hash Table RAM. *Fidelity Mach 2/3/4*, *Mephisto Almeria/Portorose/Lyon* all have a measure of Hash Table RAM, making for a 25%-100% speed-up. (The *Lyon* has a Hash Table [On/Off] feature so you can CHECK its big improvement for yourself).

This does NOT affect the figures in OUR study, but I thought that reference to some of the definite benefits to the programmer of the 68000 series chips would help readers see why some of

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them achieve a much bigger Elo improvement than might be expected from processor speed alone. However, whatever the programmer does or does not achieve by his use of RAM is down to his credit; just as are speed improvements obtained by changing Search Selectivity, or Singular Extensions or any other type of programming success.

The standard figure for the 68000 is to divide by 1.8. Thus 68000 at 12MHz = 6.7MHz.

However - how I wish I could keep it simpler, but I just can't if we are to cover the subject properly - some Chess programs on the 68000 have what is called "a wait state" which slows them slightly, and these we must divide by 2. The *Mephisto Amsterdam, Dallas and Roma* are the only such current programs, as far as I know. So *Amsterdam 68000* at 12MHz = 6CMHz.

For the "zero wait state" machines we have:-

Fidelity Club, Mach 2, Mephisto Lyon, all 68000 at 12MHz = 6.7CMHz. Readers will appreciate that the fact that the *Lyon* is so VERY much faster than *Club* is down to the Hash Table RAM; indeed that was the MAIN improvement going from *Club* to the early *Mach 2A* - (only a small RAM and about 25 Elo, but further expansion plus program improvements were reflected in a big change by *Mach 2B/C*).
Fidelity Mach 3 68000 at 16MHz = 8.7CMHz.

68020. The "0" wait state and "1" wait state do not apply here - all are "0" - so we can just divide by 1.1. Thus:-

Fidelity Mach 4 68020 at 20MHz = 18 CMHz.

Mephisto Roma 68020 at 14MHz = 12.7CMHz.

Mephisto Lyon 68020 at 12MHz = 10.9CMHz.

Did you notice something there? Hands up those who thought *Lyon 32 bit 68020* was TWICE as fast as *Lyon 16 bit 68000*. Quite a few of you! In fact the figures above show that the difference should be $10.9/6.7 = 1.63$. I have timed it at 1.65, so the mathematics and science of chip-speeds is right.

68030. For 68030 multiply by 1.2. The comparatively small change between the 68020 and 68030 figures will be a big surprise to many readers, I am sure. However the main value of the 68030 is NOT that it works massively better, but that it CAN operate at much faster speeds! Thus whilst the 68020 machines tend to be at 12-20MHz, the 68030's are perfectly reliable at 32-36MHz and could probably get close to 50MHz before they became "dodgy". So:-

Fidelity Mach 4 68030 at 32MHz = 38.4CMHz.

Mephisto Lyon 68030 at 36MHz = 43.2CMHz.

68040. The 68040 does present further useful programming advantages over the 68030 so that, whereas the main advantage of the 68030 was its ability to run at much faster speeds than the 68020, the 68040 has extra plusses. The 68040 MHz speed should be multiplied by 2.5. (Don't expect too great a speed-up from Hash Table RAM here, it would need a large amount at this speed for obtaining the 25% bonus!) Also it should be noted that, whilst writing programs for the 68000-68030 is straightforward in that programs require little or no adjustment from one to the other, a 68040 program does need some re-programming to take full advantage of this fast chip's internal multi-processor abilities. Even so, the 68040 can run cheerfully at 50MHz, I believe (making 125CMHz a

possibility), and could get as high as 75MHz if needed, according to my information.

Hitachi H8. "What!" did I hear you say? Well, in the next few months we will all learn more of the H8 - from Saitek, CXG and Mephisto. Saitek's *Prisma* and *Blitz* already use this chip! The H8 will not only run at around 15MHz (i.e. faster than the 6502) but, unlike the 6301 which flatters to deceive, is fairly similar in its "no. of cycles per instruction" requirement to the 6502.

In fact the best figure to use is probably to multiply by 2/3rds. In addition it CAN use Hash Tables, unlike 6301's and 6502's, and these will give programs using the H8 chip further areas of potential improvement, though none of those available at present use these. Thus:-

Saitek *Blitz* and *Prisma*, 10MHz = 6.7CMHz.

A 15MHz version would be 10CMHz and, with Hash Tables, could therefore be a possible contender, depending on the program quality, to bridge the gap between the current range of 6502's and programs such as the *Mach 3* or *Lyon 68000*...

RISC chips. Another forthcoming newcomer, for which data is only just starting to trickle in. The likely MHz speed in the immediate future should be around 20 - but the RISC system is thought by some to be quite suitable for chess programming, and Larry Kaufman anticipates a .6 or 60% CHESS MIPS figure, which means multiply by 2 to get to our CMHz. This means that a 20MHz RISC chip should achieve close to 40CMHz! Again depending on program quality, here we may see something emerge to challenge, say, the *Lyon 68020*. If the programmers working on RISC chips could achieve a program quality equal to Richard Lang's (!), then they would achieve a finished product grading somewhere between Richard's 68020 and 68030. However this would be a rather optimistic view as the *Lyon's* pre-eminence is now clearly due as much to the superb programming as the processing power.

Rumours of a "Lightning RISC chip" are not completely unfounded, as far as I know. But this 120MHz (and therefore presumably 240CMHz?!) possibility is not expected to be seen anywhere in the world of computing generally until later this year. When it will become available for a Chess Computer, who knows? And if you think *Mephisto 68030's* and *Fidelity 68040's* are expensive, then don't bother checking on the price of anything using a *Lightning* chip! If a certain firm does decide to invest £50,000/£100,000 per machine to mount a challenge for the World Micro-Computer Championship in 1992 or 3, then I'm not personally sure that's really what the Micro Championship was remotely intended for anyway.

THE PC POSITION.

IBM AT. Our starting point for the whole discussion. You may remember, if you've been concentrating! - that the IBM AT at 8MHz was 1 CHESS MIP, and thus the AT formula is multiply MHz by .4 (40%). I.e. 8MHz x .4 = 3.2CMHz.

The *Atari ST* and *Amiga* come in here as well. They are 68000's at 8MHz, but use a "wait state". Thus, like the AT, they achieve 1 CHESS MIP, and multiply by .4 = 3.2CMHz. The "problem" with these two computers is that there is not so much ongoing work being done for them, Chris Whittington and the *Chess Simulator 2150/2175* (more improvements to come) excepted.

8006/8008pc or xt. These run at 4.77MHz-9.54MHz, but are not particularly suited to Chess prog-

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rams. Divide the MHz by 4. Thus even the "double-speed" version only gives you 2.4CMHz, but can cost as "little" as £500. A typical ~~Amstrad~~ 1512/8MHz comes out at 2CMHz.

The AT and 80286's. These can be "1 wait state" = multiply by .45 (45%); so my 80286/12MHz Laptop = 5.4CMHz. Laptops are quite a popular idea and at 12MHz are in the £1,200 price range for Mono/CGA graphics. The more usual "0 wait state" applies to most "Table-Top" 80286's, in which case multiply by .55 (55%). Most 80286 machines come in the 12MHz to 20MHz range and around £1,000-£1400 (plus £150 if you go for fancy graphics/colour); and achieve 6.6CMHz to 11CMHz.

80386. These can be 80386sx or plain 80386. It is the latter which is faster! In fact the sx machines are NO better for the current chess programs than the 80286 so, unless you have other requirements for your PC, the 286 is the better buy. An 80386sx therefore also multiplies by .55 (55%) but the price of a 20MHz/sx will close in on £2,000 for its 11CMHz.

The faster 80386 will probably cost you £2,000 if you want 20MHz or thereabouts - you can go up to 33MHz - and it multiplies by .65 (65%). Thus a 20MHz model achieves 13CMHz. You can also get the 80386 with extra cache memory and this gives more speed again - in fact multiply now by .75 (75%). A 33MHz 80386+cache will get you to around 25CMHz, and play at Lyon 68000 standard with M Chess loaded, but cost you £2,500 with the Software!

80486. The ultimate PC weapon, on which M Chess v. Lyon 68020 will give you a humdinger of a Match, costs a cool £3,500-£5,000 for 25 to 33MHz versions which will invariably include a cache memory system. The speed improvement over the 80386 is quite substantial and you multiply the 80486 MHz by 1.5. Thus a 25MHz 80486 achieves 38CMHz. A program on the 80486 at 33MHz would probably beat the same program on an 80286 at 12MHz by 7½-2½, or maybe even 8-2.

Atari/Amiga. I mention these two - there may be others - because it is now possible to buy PC Emulators for them. I.e. Hardware which is fitted inside the Computer and which can make the Atari or Amiga think it's an IBM! Most Atari and Amiga addicts would probably have been horrified at the very idea until recently but it seems to me that, apart from Chris Whittington's efforts, already mentioned, virtually no-one is working on advanced chess programs for anything other than the IBM PC and compatibles. M Chess and Rex lead the field, and they are IBM only. Psion 2 is very close to Rex (in my view), and even Psion Pdom (see Rating List this time, and Alastair Scott's advert) is at least as good as, say, Chessmaster 2100.

So for the Atari and Amiga folk there are 2 Emulators: AtOnce and AtSpeed, and both cost around £200-£250 fitted. With either, the Atari and Amiga's 8MHz remains 1 MIP (older adverts for these show .6 and .8 MIP, but the latest ones claim to have recovered to 1 MIP). Therefore 3.2CMHz, nothing too "special", BUT you can run a pleasing range of strong chess programs! For a further £200 you can buy an internal Speed doubler (at least, I know you can for Atari's), and this would give you a 6.6CMHz version - the equivalent of an 80286/12MHz!

(Advert!: Chessmaster 2100 is £32, Rex is £49 and M Chess £79. Countrywide stocks them all or can get them to you within a few days, on 3½" or 5½" disks - but remember, IBM & co. only).

Conclusions

17.

Before I make my own observations, it might be worth including some figures worked out by Steve Maughan. Readers will remember his interesting "VALUE-FOR-MONEY" comparisons in SS/33 where the dedicated Computers obtained % Value figures from, at the lowest, 54%, to the top at 143%. Here are his figures for a small range of PC's and Software:

	<u>approx</u>	<u>running M Chess</u>	<u>Rex Chess</u>	<u>Psion 2</u>
8088 Desktop	£ 600	42%	28%	27%
80286 Laptop	£1400	41%	27%	26%
80286 Desktop	£1200	49%	32%	31%
80386 Desktop	£2000	46%	31%	30%
80486 Desktop	£3500	52%	37%	36%
Atari ST	£ 400			52%
Atari ST with Emulator & Speedup	£ 850			38%

These figures might be a little disappointing to the "PC FAN CLUB" - especially as they come from a leading member in STEVE MAUGHAN! However I think they confirm what seems obvious in many ways, at least to me. If you are buying a Computer for CHESS, then a dedicated machine is the best, and right buy.

[1] More ELO points for your Enotes, at every level and price point - as long as you avoid the "bottom-markers" in Steve's SS/33 list!

[2] A CHESS BOARD to play on - much easier to use and better for the quality of one's chess as well as the maintenance of the eyesight than using a screen.

[3] Easier to play WHEREVER you want in your home - on a coffee table, or even on your knee watching TV - plus a level of portability; and WHENEVER you want... you don't come to your Computer and find someone using it for something else or, worse still, it's got a program loaded in but the user is missing and you don't know if he needs it or not!

BUT... if you already have a decent (i.e. fairly fast) PERSONAL COMPUTER - I would say an 80286 or upwards - then the CHESS SOFTWARE option clearly offers a cheaper way of getting GOOD chess, at least with a couple of programs. **ALSO**, of course, for someone genuinely in a position WANTING a PC for other reasons - e.g. ChessBase/NicBase, Word Processing, Spreadsheet, Database, the Need to Learn Computing (work/education), or Space Invaders!? - then really Steve's "Value-for-Money" figures are no longer relevant to that situation as THEY are based on CHESS PROGRAM requirements ONLY! In that case I'd say go for the fastest you can afford (i.e. an 80286 or upwards if possible). £1200-£2000 will buy you a very pleasant set-up indeed, including your CHESS PROGRAM which would probably currently be M CHESS or, perhaps REX CHESS.

Nor do you need to be too fearful of all that "Computer jargon" - "there's so much to learn!" - MSDOS - CONFIGURATION SYSTEMS - BATCH FILES - ROOT DIRECTORIES - COMMAND.COM etc. We are completing work on these things to enable the more nervous to be able to buy a Computer already loaded up with the preferred Chess Software, and set-up with a simple MENU SYSTEM so someone who wanted could simply switch-on, type "MCHES", play e2e4, and prepare for a TOUGH game!

WELS Tournament, 1991

The 6th. ANNUAL WELS Tournament took place recently and, one would have to say, this excellent Event begins to look more and more like a **COMMERCIAL WORLD CHAMPIONSHIP** than the Official Tournament does! I suppose owners are more willing to risk the reputation of their machines than manufacturers! - and the organisers are doing an excellent job in persuading and arranging an excellent entry list consisting of just about all the top commercially available Computers.

Last year's result saw **Fidelity ELITE 68030/v9** and **Mephisto PORTOROSE 68020** top a field of 25 machines with 7/9. **PORTOROSE 68030** came 3rd with another **Fidelity (68020/28MHz)** on 6; followed by **MM4/10**, **Sphinx/8**, **Super Expert B/6**, **Mega 4** on 5½; **Psion 2 Atari** on 5; **Almeria 68020**, **Academy**, **Polgar/5**, **Rona 68000**, **Rona 68020** on 4½; **Mach 3/20**, **Dominator 2**, **Excel/18** on 4; **Analyst D/12**, **Phantom**, **Forte B** on 3½; **Super Expert A/5** and **Super VIP** on 3; **Rebell** on 2½, and **Simultano** on 1½.

An impressive field with all of the main contenders back for 1991 AND the added attraction of **M Chess** running on an 80486/33MHz computer, and **Rex** on an 80386 also at 33MHz. The former was considered a real candidate to challenge the **Lyon 68030**, with **Fidelity's 68030**, a **Portorose 68020** and the **Fidelity 68020/28** all entered again. **Psion** was not entered this time, but the **Atari ST** was loaded up with **Chess Simulator 2175** instead.

Rounds 1 - 3

There are always shocks in these Events, and **WELS 1991** was no exception. In the very **first Round** the **Mephisto MM5/5** "disgraced itself" by beating the mighty **Lyon 68030** in a long 94 moves! Other surprises were **Chess Simulator** getting a draw with the **Novag Super Expert C/6**, and a **Mephisto MM4** beating an **MM5/10** in another long game. **Mach 4/28** was also held to a draw by **Analyst D/12**, but the other Tournament favourites, **Elite 68030**, **M Chess**, **Rex** and **Portorose 68020** all safely won their first games.

In **Round 2** the top **Fidelities** and **Mephistos** all won, with **Portorose 68020** beating **Rex** in 37 moves in one key game. But **M Chess** came a cropper against **Polgar/5** to provide a major shock. **Chess Simulator** got its second draw, this time against the **Mega 4**, so had made a bright start. **Round 3** was "boring" with all games going as most folk would expect. **Elite 68030** scored a convincing 27 move win over **Portorose 68020**, and **M Chess** mated **MM2** on move 29!

White ELITE 68030, Black PORTOROSE 68020

1.e4 c6 2.d4 d5 3.Nc3 dxe4 4.Nxe4 Nf6 5.Nxf6 exf6 6.Bc4 Qe7+ 7.Qe2 Ne6 8.Bb3 Nd7 9.Nf3 Ng4 10.Ne3 Qe4 11.h3 Nxf3 12.gxf3 Qe7 13.O-O-O a5 14.d5 Nc5 15.d6! Qe5 16.f4 Qe4 17.f3 Nxb3+ 18.cxb3 Qf5 19.d7+ Qxd7 20.Rxd7 Rxd7 21.Rd1+ Kc7 22.Qd3 Nc5 23.Bxc5 Rad8 24.Nd6+ Rxd6 25.Qxd6+ Kb6 26.Qd4+ Ka6 27.Qc4+ Kb6, and 1-0.

So the leaders were:-

- (3) Elite 68030,
- (2½) Polgar/10, Mach 4/28
- (2) Rex, Polgar/5, MM5/10, Portorose 68020, Super Expert C/6, M Chess, Almeria 68020, Roma 68020, Lyon 68020
- (1½) Sphinx/8, MM5/5, Mega 4
- (1) Simulator 2175, MM4/5, MM4/10, Academy, Analyst D/12

Rounds 4-6

There was a key game scheduled for Round 4: Elite 68030 (3) v. Mach 4/28 (2½). The Elite, with White, had despatched the Portorose 68020 in just 27 moves in the previous Round, and had the White pieces again. But unexpected results were already coming in from the early finishers - Super VIP had won with black against MM4 (and in only 29 moves!); the Polgar/10, also with Black, beat M Chess; and the MM5/10, again with Black, had beaten Portorose 68020. So Mach 4/28, using its f8/Bishop cleverly, completed a remarkable series of wins for a set of "underdogs" playing Black with its win in 65 moves. This put Mach 4/28 and Polgar/10 into 1= spot (3½), with Elite 68030, Roma 68020, MM5/10, Almeria 68020 and Lyon 68030, (3), breathing down their necks.

The Elite 68030 (3) dropped another ½-point in Round 5, this time against Roma 68020 (3), but Mach 4/28 (3½) v. Polgar/10 (3½) was the key game for those spectators who were following the Tournament leaders rather than those with the big reputations. The Fidelity again won exclamation marks for its Bishop play and went into the sole lead with a 67 move win playing White. The Lyon 68030 (3) also won again beating Almeria 68020 (3). Surprises were still in evidence: the MM5/5 beat Portorose 68020 to do its chances no good at all, and M Chess (from which so much had been expected on the ultra-fast 80486/33) could only get a draw with the Mega 4 and was stuck on 2½/5 at this stage.

Mach 4/28 (4½) and Lyon 68030 (4) had to meet at some time, but the 4 successive wins of both, especially after Lyon's shock start meant, an appointment in Round 6. In a dramatic tussle lasting 116 moves, the Lyon made Queen moves at 44 and 73 earning a total of 5 ????? in the MODUL MAGAZINE report, but managed the ½-point in the end. I've got a copy of the game and can include this key struggle if it looks worthwhile - but does anyone play through 116 movers? The quick impression I get is that Lyon missed at least two good winning chances and was thankful for the draw in the end.

The MM5/10 (4) had also won 4 straight games, but came unstuck against a revived Elite 68030. Analyst D/12 (2) won its first game in this round, against MM4/5 - the first of 4 on the run to gain an exalted position by the end! M Chess kept itself just on the heels of the leaders also, by beating Super Expert C/6. Mega 4 beating Polgar/5 was the only result to raise the eyebrows a little.

20. After 6 Rounds, the leaders were:-

- (5) Mach 4/28
- (4½) Elite 68030, Lyon 68030
- (4) Polgar/10, Roma 68020, Almeria 68020, MM5/10
- (3½) Mega 4, M Chess, Rex
- (3) MM5/5, Portorose 68020, Polgar/5, Analyst D/12, Academy, Mach 3
- (2½) Super Expert C/6, MM4/10, Roma 68000

The draw for **Round 7** included some very interesting meetings:-

Elite 68030 v. Lyon 68030
Rex v. M Chess

Also Mach 4/28 v. Roma 68020, and Polgar/10 v. Almeria 68020 were contests likely to affect the top placings. Polgar/10, in fact, due to going to 3½/4 after beating M Chess, was in the middle of a very tough series of games which left it licking its wounds in mid-table in the end. Almeria beat it in this one; but the Mach 4/28 v. Roma 020 game was drawn, leaving a chance for the 68030's to get a share of 1st. place (at last) if one of them could win their game.

But first, here is White Rex 306/33 v. Black M Chess 486/33

1.e4 c5 2.Nf3 d6 3.d4 cxd4 4.Nxd4 Nf6 5.Nc3 Nc6 6.Bg5 Nd7 7.Qd2 Nc8 8.0-0-0 Nxd4 9.Qxd4 Qa5 10.f4 e6 11.e5 dxe5 12.fxe5 Rxc3! 13.bxc3? (Super Expert has 13.Bd2 Bc5 14.Brc3 in its Book, as a matter of interest) - Nc5 14.Qd3 Ba3+ 15.Kd2 Qxe5 16.Bxf6 gxf6 17.Ne2 Nb2 18.Rb1 Ba3 19.Nxb7 Nc6 20.Rxa7 Bc5 21.Ra6 Bxg2 22.Rb1 Qf4+ 23.Kel Qf2+ (I understand M Chess jumped from a +035 to +232 eval. between moves 22 and 23) 24.Kd1 Ke7 25.Qg3 Rd8+ 26.Bd3 Bf3+ 27.Kel Rxd3! 28.Qxf2 Rdl+ 29.Kb2 Rxb1+ 30.Rxb1 Bxf2 31.c4 e5 32.c5 Nxc5 33.Ra5 Bd6 34.c4 e4 35.c5 Bxb2 36.Ra7+ Kd8 37.Ra3 Bg1 38.Ra8+ Kd7 39.Ra7+ Ke6 40.Ra6+ Kd5 41.Rd6+ Ke5 42.Rd7 Brc5 43.Nc2 e3 44.Rd8 e2 45.Kd3 f5 and White resigned.

Now that was a bit of a rotten trick, as I know most of you are really waiting for the result of the "68030 clash". So here you are:-

White ELITE 68030 v. Black LYON 68030

1.d4 c6?! 2.e4 d5 3.exd5 cxd5 4.Nd3 Nc6 5.c3 Nf6 6.Nf4 Ng4 7.Qb3 Qd7 (both Computers go out of Book here) 8.f3 Nh5 9.Nd2 Ng6 10.Nxg6 hrg6 11.Ne2 e6 12.0-0 Bd6 13.Qb5 Nxf4 14.Nxf4 Qc7 15.g3 0-0-0 16.Nh3 g5 17.Ne2 g4! 18.Nc5 gxf3 19.Nxf3 a6 20.Qb3 Ng4 21.h4 g5! 22.Raf1 Nce5! 23.dxe5 Qxc5+ 24.Nd4 Nxe5 25.Nxf7 Nxf7 26.Nxf7 b5 27.Kg2 gxh4 28.gxh4 Rdg8+ 29.Kf1 Rxb4 30.Nf2 Rf8 31.Kg2 Rxf2 32.Kxf2 Nh2+ 33.Kg1 Qd6 34.c4 Rh4 35.Qf3 Qh2+ 36.Kf1 Rf4 37.cxd5 exd5 38.Kel Rxf3 39.Nxf3 Qxb2 40.Nd2 Qxa2 41.Ke2 Qc2 42.Ke3 b4 43.Nf3 b3 44.Nel Qe4+ (announcing mate in 7) 45.Kf2 b2 46.Nf3 bl=Q 47.Kg2 Qbd3 48.Kg1 Qdxf3 49.Kh2 Qg2 is mate.

So Lyon 68030 had finally fought its way to a share of the lead with the Mach 4/28MHz, but the Elite 68030 now looked just out of it. Analyst D/12 continued its surge with a fine 36 move win over the Mach 3. Just the top few at Round 7:-

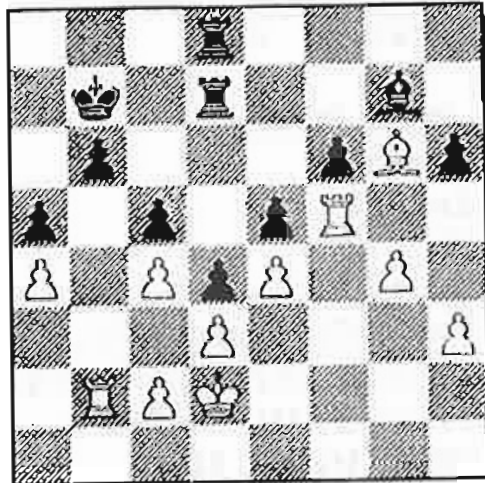
(5½) Mach 4/28, Lyon 68030. (5) Almeria 68020, MM5/10. (4½) Elite 68030, Roma 68020, M Chess.

The Round 8 draw paired the Lyon 68030 against the MM5/10 (remember it lost to MM5/5 in Round 1!), and Mach 4/28 against Almeria 68020. Another one amongst those just behind the top 4 matched Elite 68030 and M Chess and, in this, the Fidelity program effectively ended any hopes M Chess still had with a 53 move win after M Chess wrongly invited the exchange of Queens giving it a lost Pawn endgame. The Analyst D/12 continued its storming finish with a win playing Black, in 32 moves, against Polgar/10. At the wrong end of the table the MM4 and Super Forte B finally pulled away from the Super VIP and Simulator 2175 with wins over each of them. The Roma 68000 had been having a poor time and dropped into the danger area after its staggering 22 move loss to Super Expert C/6 in this Round.

White SUPER EXPERT C/6. Black ROMA 68000

1.e4 Nf6 2.e5 Nd5 3.d4 d6 4.Nf3 Nc6 5.c4 Nb6 6.e6 fxe6 7.Ne3 g6 8.h4 Bg7 9.h5 e5 10.d5 e4 11.Ng5 Bxb2 12.Nd2 Bxa1 13.Qxa1 Ne5 14.Ndxe4 0-0 15.f4 Bbxc4 16.Bxc4 Nxc4 17.hxg6 e5 18.dxe6 h6 19.Nf7 Ne5 20.Nxd8 Nd3+ 21.Rf1 Rf5 22.e7 Re5 and 1-0.

Back to the top games, where Mach 4/28 was held to a draw, leaving a successful Lyon 68030 in the clear lead after a tense battle with the MM5/10. From the diagram, in a very drawish position to say the least, the MM5/10 erred badly with 60. - Rd6?? This allows the Lyon to finally get his Bishop into the game... 61.Bf7! Kc6 62.Nd5+ Kc7 63.c3 Rh8 64.cxd4 exd4 65.e5 fxe5 66.Rf7+ Rd7 67.Rxd7+ Kxd7 68.Rxb6 Bf8 69.Rb5 Bd6 70.Rxa5 Bb8 71.Rb5 Rxb5? (The opposite coloured Bishops wont save Black) 72.cxb5 Bc7 73.Kc2 Kd6 74.Be4 Bb6 75.Kb3 Re7 76.h4 Kf7 77.Kc4 Kf6 78.Kd5 Bd8 79.Kc6 c4 80.dxc4 d3 81.Nxd3 e4 82.Bxc4 Ke6 and Black resigned.



Leading scores then, with one Round to go:-

- (6½) Lyon 68030, (6) Mach 4/28, (5½) Almeria 68020, Roma 68020, Elite 68030,
- (5) MM5/10, Portorose 68020, Analyst D/12, (4½) Super Expert C/6, M Chess
- (4) Mach 3, Academy, MM5/5, Rex, Polgar/10, Polgar/5

22.

The Mach 4/28 certainly did its best, with another fine win - this time with White in 44 moves against the dangerous Portorose 68020.

But the Lyon 68030, with Black, was in good shape against Roma 68020 after just 25 moves and actually got the quicker win, so its overall victory in the Event, during the last Round, was never really in too much doubt.

For 3rd. place the Elite 68030 pulled clear with a 37 moves win over Almeria; M Chess also recorded a another crushing win, this time in 30 moves against Academy. (though the M Chess final score was disappointing, considering it played on a very powerful 80486, it did record wins in 34, 29, and 30 moves to demonstrate a positive attitude!). Novag Super Expert C/6 brought the controversy of "killer" Opening Books into this Round - we have reported before on the question of its being "booked-up for Fidelity" (you may remember that the PLY folk wouldn't include their games for Rating purposes at one time!). In a QGA with Black the Super Expert now stayed in Book until move 22 (Mach 3 was on its own from move 12) and mated the Fidelity at move 60. And in the final "battle" for holding the rest up, Super VIP overcame Simulator 2175 to leave the latter with that sad honour on its own.

Before giving the final table, readers will be interested to see the following statistics provided by our friends at MODUL:-

White wins 38.5%
Black wins 33.3%
Draws 28.2%

FINAL TABLE. Out of 9

(7½) Lyon 68030
(7) Mach 4/28
(6½) Elite 68030
(6) Analyst D/12
(5½) Roma 68020, Almeria 68020, M Chess 486, Super Expert C/6
(5) Portorose 68020, MM5/10, Polgar/5
(4½) Polgar/10, Rex 386, Mega 4
(4) MM5/5, Academy, Mach 3
(3½) MM4/10, Super Forte B, Forte B, MM2
(3) Sphinx/8, MM4/5, Super VIP, Roma 68000
(2½)
(2)
(1½) Chess Simulator 2175

An interesting Final Table - and some surprises (Polgar/5 above Polgar/10; low Mach 3; very low Roma 68000; a good score for Analyst D/12 and Super Expert C/6). All the result of a lot of hard work - I wonder if we could put something like this on in Britain?! - "Well done, MODUL".

No.1 - Black wins by 1...Rf3!! 2.Bf3 Qf3!! 3.Kf3 Nd4+ 4.Ig4 Bc8+ 5.Yh4 Nf3 mate! The PORTOROSE solved this one in 20secs; the LYON needed just 1second!

No.2 - Black wins here by 1...Ng3+ 2.hg hg+ 3.Kg1 Nf2! 4.Rf2 Rh1+ 5.Kh1 g4 and Queens. PORTOROSE solved this one - but took 8mins, whilst the LYON gets it in just under 1min.

No.3 - The LYON finds White's winning 1.Ra7+! in just 11secs. The main line goes, 1...Ka7 2.Qc7+ Qb7 3.Ra1+ Na6 4.Ra6+ Ka6 5.Bc5+ bc 6.Qa6 mate! Isn't that beautiful! The PORTOROSE took 2mins 40secs compared to LYON's 11secs to get this one.

No.4 - This is a Bobby Fischer gem! - perhaps you recognised it. White won by 1.Rf6!! since, if 1...Bf6 2.e5 and Black is helpless. LYON only just beats the PORTOROSE this time, 30secs against 40secs.

No.5 - Another absolute classic! Black won by 1...Rb2!!! 2.Nb2 c3! 3.Rb6 (If 3.Nd3 c4+ 4.Rb6 cd, and one Queens) 3...c4!! 4.Rb4 a5! 5.Rc4 (If 5.Nc4 then c2!) 5...cb and Queens! Not surprisingly this is one of those the LYON didn't solve - and if you did, I bet you'd seen it before!

NOTES re the RATING LIST (back page) to help MAGAZINE NEWCOMERS

/5 after a machine indicates its **PROCESSOR SPEED** in MHz. Some programs are available running at different speeds, and this helps to distinguish them.

+/- shows the maximum future **RATING MOVEMENT**, up or down, likely for the Computer. It is 95% certain mathematically that a machine's rating will stay within the +/- range shown.

Human Games This column shows the total results each Computer has obtained, in all countries, in tournament play against humans. The figures from abroad are adjusted to British levels and affect, (1) the **FINAL** rating given to the **INDIVIDUAL** machine concerned, and (2) the **OVERALL LEVEL** of the finished Rating List for ALL Computers. I.e. a **BAD** result by one machine will affect **ITS** rating **most** of all, but will also reduce slightly **ALL** ratings. Conversely a **GOOD** result by a Computer will **LIFT** its rating **most**, but will also **SLIGHTLY** improve all ratings. Thus a series of poor results by Chess Computers in tournament play can result in the whole list dropping by quite a few points. Some people feel that the results v. humans are more important than those v. computers - but they often involve only a small number of games and can then be very unreliable. We have found that computer performances amongst each other produce results relating **very** closely indeed to their results against humans in almost all cases where there have been sufficient of the latter. We thus believe the **Elo** and **BCF** figures in **SS**, which combine **both**, are the **MOST** accurate available anywhere.

