

ADVANCE WARNING

Tony Harrington talks to Dave Wilson and Mike Johnson, last year's winners of the PCW Chess Tournament, about their successful chess program, Advance 2.4

The mysteries of print schedules are to blame for the fact that although you are reading this long after the last move has been played in the 4th European Micro-computer Chess Championship. I am writing it some weeks before the start of the event.

Next month, you will have a full, blow by blow account of the Tournament. But since, from my point of view, we are still on the before side of the Tournament, it seems fitting to give a profile of the authors of the program which won last year. Who knows, perhaps they will have won this year's too!

Last year's winners were Dave Wilson and Mike Johnson, with their joint entry, Advance 2.4. They swept all before them, conceding only two draws in the seven rounds.

The two joined forces for the first time in early 1980 to produce a program for that year's PCW Tournament. Wilson was then, and still is, a member of British Telecom's R & D team, while ever since the 1981 PCW Show, Mike Johnson has worked for Intelligent Software (profile in PCW, April 1983).

Ask either of them what interests them about computer chess and the answer you get is, in a word, 'winning'. 'There is nothing like watching your program grind through all the opposition. It's a very satisfying sight,' Wilson told me.

For both of them, the idea of writing chess programs seems to have been simply a logical extension of their interest in programming. Johnson in particular tends to look astonished if you ask him how he got into chess programming. 'Because it's there,' he says, in a manner reminiscent of Sir Edmund Hilary's classic reply to the person who wanted to know why he climbed Everest.

They built their own hardware to run it on and ever since its first competition, their program, Advance 2.4, has proved a formidable opponent.

Their rivals will be the first to point out that the special 64 databus hardware that fuels Advance 2.4 gives it something of a headstart over most other programs. It runs on a bit-slice machine and is a great deal faster than standard microprocessors. This fact has caused a few organisational headaches at PCW Tournaments in the

past, where there were hot disputes as to whether or not the machine qualified as a microcomputer.

Fortunately, it has now become an accepted presence at the Tournament each year and the grumbles about unfair hardware have receded. The way the program is written demands a 64 bit wide data structure and so it has to have a 64 bit processor.

According to Wilson, the current version of Advance 2.4 is twice as fast as last year's, so it looks at this point as if the competition is in for a hard time. 'There were a few hardware flaws last year which we didn't have time to sort out before the Tournament began, and they slowed everything down quite a lot,' he said.

But there is some relief in sight for all the other entrants. Wilson and Johnson reckon that Advance has reached its peak this year. 'There is nothing much more that we can do to the algorithms or the scoring function to improve it. In fact, aside from rectifying the hardware faults, we have hardly touched the program since last year,' Wilson commented.

'To improve it now we would either have to invest in some amazingly expensive hardware or redesign the software totally.'

Instead, he and Johnson have each been working hard designing their own programs. And there is not too much that they can collaborate on with the new programs since they have taken theoretically opposed paths.

Both are somewhat disappointed with the state of the art in chess programming at the moment. They feel that no-one has really made any great theoretical leap forward in getting computers to play chess more 'intuitively' instead of relying on raw number crunching. In practice, they point out, since the programming problems are not being solved completely, the faster you can make your processor go, the more positions you can look at, and the more chance you have of producing a winning machine.

'We're highly sceptical of the ratings that some of the commercial suppliers are claiming for their machines. When you hear of 1900 and 2000 ratings for dedicated computer chess machines, it's a laugh. We know from experience that no matter how well Advance does against other chess

computers, when we put it into a human tournament like the North London Congress, it gets slaughtered by all and sundry,' they pointed out.

The normal preparation for Advance 2.4's entry into the PCW Show is an outing at one or two local chess tournaments. 'The traditional result is a point or two for us, usually as the result of a bye!' Johnson remarked. 'When we wheel it out at these events, we usually find ourselves having to solve one hardware problem after another. And when it does play through a whole game, the player, no matter what his or her grade, tends to walk all over the machine.'

This comment, though it is borne out by the results (as you can see from the table of events in which Advance has competed) is a little unfair on the state of computer chess. Several of the machines now available (or due to become available by Christmas this year) look well able to give the medium club player a very tough struggle.

The results of this year's Tournament, coupled with the World Championships held in Budapest shortly after the PCW championships end, will answer quite a few questions about the current state of computer chess.

Games section

White: Ostrich. Black: Advance 2.4. Dallas 1982, Sicilian Defence. Notes by David Levy.

Ostrich is one of the more experienced programs on the chess circuit, having competed in the North American and World Championships for many years. Its author, Monroe Newborn, is one of the world's leading authorities on computer chess, and has written a book, *Computer Chess* published by Academic Press. In the Dallas Tournament, Ostrich was running on 8 Data General Nova computers — working in parallel.

1	e2-e4	c7-c5
2	Ng1-f3	d7-d6
3	d2-d4	c5xd4
4	Nf3xd4	Ng8-f6
5	Nb1-c3	a7-a6
6	Bc1-g5	e7-e6

(This position has been seen literally thousands of times in master games, with White playing f7-f2-f4 in more than 99% of

ADVANCE Microcomputer Chess System—Results Against Computers

Competition, Place, Date	Ver	Position	Points	W	D	L	Rating	Comments
1st World Microcomputer Chess Championship, London, Sep 1980	—	3:14	3:5	2	2	1	—	Best Amateur
3rd World Computer Chess Championship, Linz, Oct 1980	1.0	12=:18	1.5:4	1	1	2	—	
2nd European Microcomputer Chess Championship, London, Sep 1981	2.0	2:12	4:5	4	0	1	—	
Against BCP, London, Jun 1982	2.3	—	2:2	2	0	0	—	BCP was 6= in Linz
3rd European Microcomputer Chess Championship, London, Sep 1982	2.4	1:12	6:7	6	2	0	—	European Champion
Against FIDELITY 9, London, Sep 1982	2.4	—	2:2	2	0	0	—	
Against CONCHES, London, Sep 1982	2.4	—	2:2	2	0	0	—	
Against MEPHISTO 2, London, Sep 1982	2.4	—	2:3	2	0	1	—	
13th U.S. ACM Computer Chess Championship, Dallas, Oct 1982	2.4	5=:14	2.5:4	2	1	1	1649	
AGGREGATE SCORE since Sep 1980		25.0:34		22	6	6		73.5%

ADVANCE Microcomputer Chess System—Results Against Humans

Competition, Place, Date	Ver	Position	Points	W	D	L	Rating	Comments
1st North London Autumn Chess Congress, London, Oct 1981	2.1	—	0.5:6	0	0	0	—	0.5bye, 6h/w failures
17th Islington Chess Congress, London, Dec 1981	2.1	—	1:6	0	1	0	—	0.5bye, 5h/w failures
Grievous Grant British Championship Qualifying Tournament, London, Jun 1982	2.3	40=:81	2:5	1	2	2	1776	2h/w problems
11th London Chess Congress, London, Jul 1982	2.3	—	1:6	0	1	4	—	0.5bye

The ADVANCE Microcomputer Chess System vs computers and humans.

those encounters.)

7 Bf1-e2?

(White's first move out of the openings book is an insipid choice.)

7 Bf8-e7

Bg5-e3

(A retrograde step. Ostrich may have been worried that after a safe-looking move such as 8 0-0, Black can play 8... Nf6xe4 9 Bg5xe7 Ne4xc3 10 Be7xd8 Nc3xd1, when Black has won a pawn.)

8 Nb8-d7

9 0-0 Nd7-c5

(Black is playing well, and exhibits a good understanding of the ideas behind the Sicilian Defence. The text puts pressure on the e4 pawn and invites White to weaken itself along the g1-a7 diagonal.)

10 f2-f3 Qd8-c7

11 a2-a4

(Preventing the thematic Q-side thrust... b7-b5.)

11 0-0

12 Qd1-e1 e6-e5

13 Nd4-b3

(A tempting possibility was 13 Nd4-f5 Bc8xf5 14 e4xf5, followed by g2-g4, g4-g5 and Qe1-h4, with attacking prospects on the K-side.)

13 Nc5xb3

14 c2xb3 Bc8-e6

15 b3-b4 d6-d5!

(A fine positional move. Whenever

Black can get away with... d6-d5 in the Sicilian Defence, it is a sure sign that White's prospects are going downhill.)

16 e4xd5 Nf6xd5

17 Nc3xd5 Be6xd5

18 v4-b5?!

(It is difficult to justify this move. Ostrich may have expected that it would lead to the doubling of the b-pawns, but this is not the case. I would probably have played 18 Ra1-c1 Qc7-d7 19 Be3-c5 Be7xc5

20 Rc1xc5, when White's initiative appears to compensate for the doubled pawns.)

18 ... Be7-c5

19 Be3xc5 Qc7xc5+

20 Kgl-h1 a6-a5

(No undoubling of the b-pawns.)

21 Qe1-g3 Qc5-d4

22 Ra1-d1 Qd4xb2

23 Qg3-f2

(Passive. White might have tried 23 Rd1xd5 Qb2xc2 24 Rf1-e1 Qe2-c4 25 Qg3xe5 Qc4xa4 26 Rd5-d7, when although a pawn down, the rook on the 7th rank and domination of the e-file might provide adequate compensation.)

23 ... Ra8-d8

24 Rd1-d3 Bd5-b3

25 Qf2-g1 Rd8xd3

26 Be2xd3 Bb3xa4

(In winning a second pawn, Black has allowed its bishop to go offside. White might have been able to take advantage of this with accurate play, but somehow Ostrich seems to lack the necessary energy at this point in the struggle.)

27 Qg1-c5 Rf8-d8

28 Bd3-c4?

(Now 29 Qc5-c7 might have saved the game.)

28 ... Qb2-b4!

(Virtually forcing the exchange of queens, and getting a dangerous passed pawn to boot.)

29 Qc5xb4 a5xb4

30 h2-h3 Ba4-c2

31 g2-g3 b4-b3

32 Kh1-g2 Rd8-d4

33 Rf1-a1 Kg8-f8

34 Ra1-a8+ Kf8-e7

35 Bc4xb3

(The pawn could not be stopped.)

35 ... Bc2xb3

36 Ra8-h8 h7-h6

37 Rh8-c8 Rd4-d2+

38 Kg2-f1 Bb3-d5

39 f3-f4 Rd2-d3

40 f4xe5 Rd3xg3

41 h3-h4 Rg3-g4

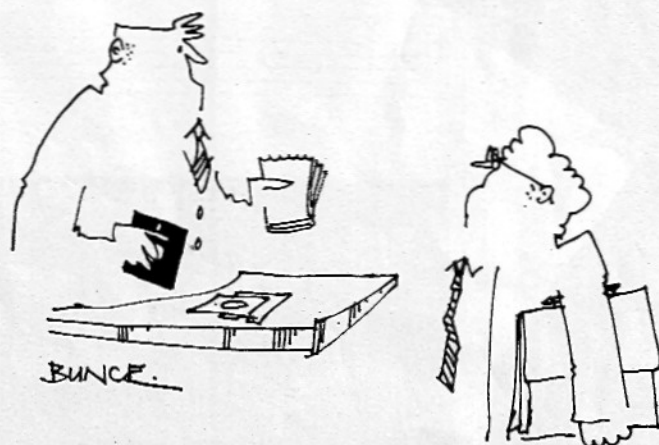
42 Rc8-g8 Bd5-c4+

43 Kf1-e1 Bc4xb5

44 Rg8-b8 Bb5-c6

45 Rb8-g8 (and White resigns.)

END



'Listen, kid, this Flight Simulator program is so real it comes with a set of brown paper bags.'