

# MICROCHESS



Kevin O'Connell describes the battle for the big title.

The first World Microcomputer Championship was treated with the full respect it deserved, being held under the auspices not only of the ICCA (International Computer Chess Association) but also under those of FIDE (Federation Internationale des Echecs) — the World Chess Federation. Held in London, as part of the Personal Computer World Show (4-6 September), it was certainly a prestigious event, which the commercial entries, seeking publicity from the World Champion title for their program, proved by sending top executives to oversee the operation of their machines.

There were 14 competitors — there could have been more but quite a few enquiries arrived too late: a very strong American program arrived two days after the tournament ended! Originally sent in June with a 15 cent stamp, it had been returned to sender because of insufficient postage, was put back in the mail bearing a second 15 cent stamp (just one cent short of the airmail tariff) and so travelled by sea, no doubt leaving the programmer feeling rather sick.

Once all the entries were in and the Championship ready to start, David Levy and myself handed over responsibility for the event to Michael Clarke and Peter Morrish who were, respectively, Tournament Arbiter and Tournament Director.

The first round results would have completely justified the seeding had not Sargon 2.0 lost on time when it was more than a queen ahead on material. K. Chess IV also had an unfortunate experience — the draw gave it the white pieces but it could only play with black! K. Chess IV lost that game by default, but some hurried modifications enabled it to complete the course.

Round two put a check to the aspirations of Mike Johnson, winner of the 1978 PCW tournament, and David Broughton, winner of last year's non-commercial prize. David Broughton's Vega went down to Sargon 2.0 while Mike 3.0, the only program running on special chess hardware, drew by repetition against the Modular Game System 2.5 despite being a queen up.

The two programs that had now emerged as favourites met in the third round. You will find this game, between Chess Challenger and Boris Experimental, later in my article. The destiny of the non-commercial first prize seemed almost sure to go to Mike Johnson and Dave Wilson when Mike 3.0 won while Vega lost again.

In round five, Chess Challenger played its most convincing game of the Championship, beating the Modular Game System 2.5. Since Challenger's other nearest rival at the start of this round, Mike 3.0, also lost, Challenger's

lead, with just one round to go, extended to a full point.

In the last round attention was focused on the games Sargon 2.0 v Chess Challenger and Rook 4.0 v Mike 3.0, with a weather eye cast on developments in Boris Experimental's game. If Sargon 2.0 could beat Challenger and Boris Experimental could defeat its opponent (which it did), there would be a tie for first place and the excitement of a play-off match. As you will see from the position below, Sargon 2.0 had its chance but missed it and was then relentlessly ground down, so Challenger finished with a clean score. The game

between Rook and Mike would determine the winner for the top non-commercial prize. In the event these two programs drew and there could have been a tie for all three non-commercial prizes had Vega been able to win, but it was having an uphill struggle to draw with the Auto Response Board 2.5.

Mike 3.0 and Rook 4.0 shared £750 for the top two non-commercial entries, the other prize of £100 going to Vega 1.7. Chess Challenger took the handsome trophy and the glory of being the first program to bear the illustrious title of World Microcomputer Chess Champion.

## Table of results

PROGRAM (* commercial entry)	R1	R2	R3	R4	R5	Tot.	S/ded
1 CHESS CHALLENGER* (USA) (Dan & Kathe Spracklen, Ron Nelson, Frank Duason & Ed English) (6502 - Assembler) 20k	W12	W10	W2	W7	W5	5	5
2 BORIS EXPERIMENTAL* (USA) (programmers not named but based on Boris 2.5 by Dan & Kathe Spracklen) (6502 - Assembler) 8k	W14	W8	L1	W3	W7	4	6
3 MIKE 3.0 (UK) Mike Johnson & Dave Wilson (6502 & chess hardware - Assembler) 48k	W10	D7	W11	L2	D4	3	3
4 ROOK 4.0 (Sweden) Lars Kallson (Z8000 - Assembler) 16k	L9	D12	W10	W6	D3	3	9
5 SARGON 2.0* (USA) Dan & Kathe Spracklen (6502 - Machine Language) 24k	L11	W9	W13	W12	L1	3	7
6 GAMBIET* (Netherlands) Wim Rens (Z80 - Assembler) 10k	L7	W11	W8	L4	W12	3	11
7 MODULAR GAME SYSTEM 2.5* (USA) Dan & Kathe Spracklen (6502 - Assembler) 8k	W6	D3	W9	L1	L2	2½	4
8 AUTO RESPONSE BOARD 2.5* (USA) Dan & Kathe Spracklen (6502 - Machine Language) 8k	W13	L2	L6	W11	D9	2½	1
9 VEGA 1.7 (UK) David Broughton (Z80 - Assembler) 12k	W4	L5	L7	W13	D8	2½	2
10 VIKTOR (Switzerland) Herbert Bruderer (8085 - Assembler) 8k	L3	L1	L4	W14	W13	2	10
11 ALBATROSS (UK) Michael Parker (Z80 - Assembler) 18k	W5	L6	L3	L8	W14	2	14
12 FAFNER 2 (UK) Guy Burkill & Alex Kidson (6502 - Pascal & Assembler) 16k	L1	D4	W14	W5	W6	1½	12
13 PRINCESS 1.0 (Sweden) Ulf Rathsmann (6502 - Assembler) 12k	L8	W14	L5	L9	L10	1	8
14 K. CHESS IV (UK) Andrew Thomason (Z80 - Machine Language) 2.2k	L2	L13	L12	L10	L11	0	13

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Looking through the final score-table it seems almost to be a match tournament Dan and Kathe Spracklen against the rest of the world, an event they lost by the narrowest of margins; the five programs written by them (entirely or in large part) scored 17 out of the total available 35 points.

Fidelity Electronics' representatives were rather coy about the Spracklens' involvement with the Chess Challenger program. However, there were three major give-aways: Fidelity's entry for the World Computer Championship in Linz listed the five programmers who I have listed in brackets on the results table, the program's playing style bore an uncanny resemblance to Sargon 3.0 which, in the Auto Response Board, won last year's PCW tournament, and the third point seems a clincher. All previous Challenger programs, including the brand new Sensory Voice, have used a Z80 or Z80A processor while the Championship winning program, although playing in a Sensory Voice housing used a 6502 processor, just like all the Spracklen's other recent chess programs.

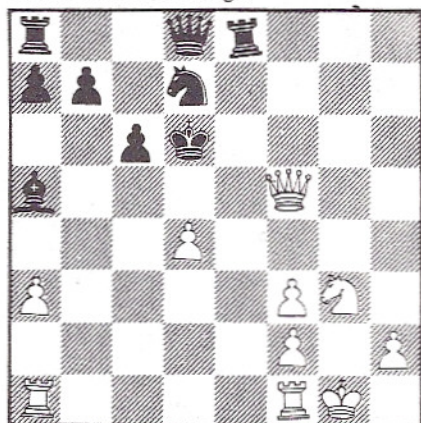
By all means rush out to your nearest store and buy a Sensory Voice Challenger, but don't expect it to play anything like as well as the program that won the Championship. No doubt, though, the Champion program will be marketed sometime next year.

The games and positions that follow were the most interesting played in the Championship. Readers wishing to obtain a copy of the tournament bulletin, containing the moves of all the games played, should send a large stamped addressed envelope and £1.50 to PCW (Chess Games), 14 Rathbone Place, London W1P 1DE.

## The Games

En route to victory, Chess Challenger had quite a lot of good fortune, being hopelessly lost in no less than three games. Before looking in detail at the important game against the Boris Experimental, here is an episode from Challenger's second round game.

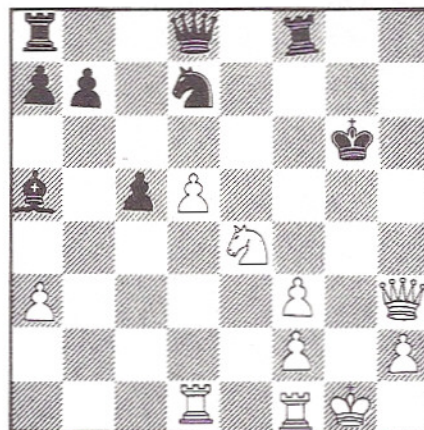
White: Viktor  
Black: Chess Challenger



26 Qf5-f4+, which gets at least a draw, would have been interesting, eg. 26... Kd6-d5 27 Qf4-f5+ Kd5xd4 28 Rf1-d1+ Kd4-c4 29 Ral-c1+ Kc4-b3 30 Qf5-d3+ with a quick mate, or 26... Kf6-e7 27 Rf1-e1+ Ba5xe1 28 Ralxe1+ Nd7-e5 29 Ng3-h5! with a

tremendous attack.

Instead Viktor played 26 Ra1-d1 and the game continued 26... Re8-f8 27 Ng3-e4+ Kd6-e7 28 Qf5-g3+ Ke7-f7 29 Qg5-f5+ Kf7-g7 30 Qf5-g4+ Kg7-h6 31 Qh4-h3+ Kh6-g6. Now Viktor's power supply became disconnected. The game got under way again with 32 d4-d5! c6-c5, reaching the position of the next diagram.

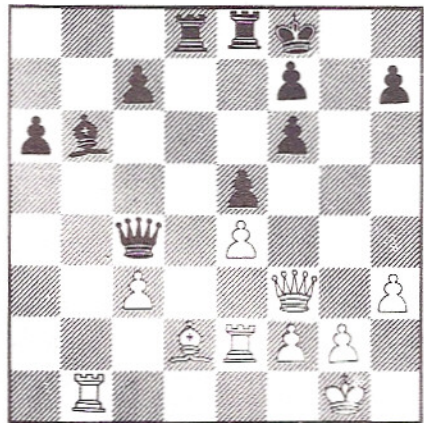


Now, instead of 33 Rd1-c1 as played, White could have won with 33 Kg1-h1! for then there is nothing Black can do about the threat of Rf1-g1+, for example: (A) 33... Kg6-f7 34 Qh3-e6+ Kf7-g7 35 Rf1-g1+ Kg7-h7 (35... Kg7-h8 36 Qe6-h6 mate) 36 Qe6-g6+ and mate next move.

(B) 33... Nd7-f6 34 Rf1-g1+ Kg6-f7 35 Qh3-e6 mate.

Then, in the final round, Challenger needed only a draw to be assured of outright victory in the Championship. However, a loss would give Boris Experimental a chance to tie and force a play-off match.

White: Sargon 2.0  
Black: Chess Challenger.



Sargon 2.0 now played 24 Bd2-h6+?? Any strong human (or program for that matter, for it is not a terribly deep combination) would have played instantly 24 Qf3xf6! If 24... Qc4xe2 then 25 Bd2-h6+ Kf8-g8 26 Qf6-g7 mate. Other defensive tries also fail: 24... Re8-e7 allows 25 Qf6-h8 mate while 24... Re8-e6 simply permits 25 Qf6xd8+ and White wins a whole rook.

However, Challenger got away with everything and made a clean score, but there is so much that a simple

table of results does not reveal. Let us now look in detail at the crucial third round meeting between the two programs that were to finish first and second.

White: Chess Challenger  
Black: Boris Experimental

1	e2-e4	e7-e5
2	Ng1-f3	Nb8-c6
3	Bf1-b5	a7-a6
4	Bb5-a4	b7-b5
5	Ba4-b3	Bf8-c5
6	c2-c3	Ng8-f6
7	d2-d4	e5xd4
8	e4-e5	Qd8-e7
9	c3xd4	Bc5-b4+
10	Ke1-f1?	

A very bad move, losing the right to castle. 10 Nb1-c3 was best - if 10... d7-d6 then 11 0-0 Ke1-g1 when a capture search reveals that White loses the pawn on e5 (11... d6xe5 12 d4xe5 Nc6xe5 13 Nf3xe5 Qe7xe5) but fails to produce the killer move 14 Rf1-e1.

10		Nf6-g8
11	Bc1-f4	Nc6-a5?

Obviously Boris has a strong preference for bishops over knights, otherwise it would get on with the main task in hand - developing some pieces and getting the king safely castled.

12	a2-a3	Na5xb3
13	Qd1xb3	Bb4-a5
14	Nb1-c3	Bc8-b7
15	d4-d5	

An interesting move. This reduces White's mobility in the crudest sense but is good by human standards because it frees the d4 square for use by the knight on f3 and there are possibilities of a later d5-d6.

15		0-0-0?
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Horrible. Castling (0-0-0 = Ke8-c8) into the path of the attack - White can pile up pressure along the c-file (the white bishop is also trained on c7) and there are too many weaknesses in front of the black king.

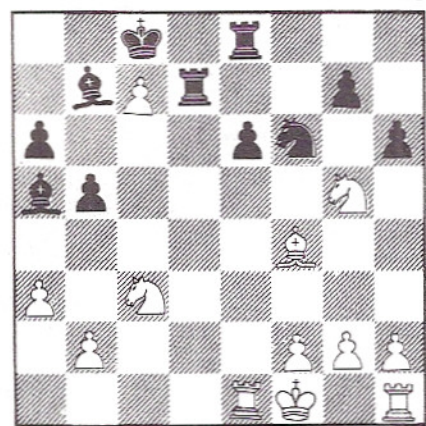
16	Ra1-c1!	f7-f6
17	e5xf6	Ng8xf6
18	d5-d6!	

If 18... c7xd6 then 19 Nc3-d5+ (discovered check from the rook on c1) wins the black queen.

18		Qe7-e6
19	Qb3xe6	d7xe6
20	d6xc7	Rd8-d7

If 20... Ba5xc7 then 21 Nc3xb5 a6xb5 22 Rc1xc7+ Kc8-b8 23 Rc7xg7+ Kb8-a8 24 Kf1-e2 leaves White comfortably two pawns ahead.

21	Nf3-g5	Rh8-e8
22	Rc1-e1	h7-h6



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23 Ng5xe6?  
It is obvious (to a human) that this loses material. It might also have been obvious to Challenger but for the availability of b2-b4, attacking a piece and pushing the loss of the knight on e6 over the horizon.

23	...	Rd7-e7
24	b2-b4	Ba5-b6
25	a3-a4	Re7xe6

Did Boris know that White was not threatening to capture twice on b5 or did it know that the knight on e6 is going nowhere?!

26	Re1xe6	Re8xe6
27	a4xb5	a6xb5
28	Bf4-e3	

Certainly not 28 Nc3xb5 because of 28...Bb7-a6.

28	...	Bb6xc7
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Black now has a substantial material advantage (knight for pawn) and should win easily, but the story has only just begun.

29	Be3-d4	Bb7-c6
30	f2-f3	Bc7-d6
31	Nc3-a2	Bc6-d5
32	Na2-c3	Bd5-c4+
33	Kf1-f2	Bd6xb4
34	Rh1-b1	

So far so good (for Black). Having increased its material advantage, Boris could now have exchanged on c3, but programs do not seem to realise that when ahead you should exchange pieces not pawns.

34	...	Bb4-d6?
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Black is still winning but the easiest route to victory (pushing the b-pawn to the queening square) now disappears. With all the pawns on one side of the board (and only two of them) the danger of a draw increases greatly.

35	Nc3xb5	Bd6xh2
36	Nb5-c3	

Of course Challenger spots the threat of 36...Re6-e2+ 37 Kf2-f1 Re2-b2+ end of game.

36	...	Bh2-d6
37	g2-g3	Kc8-d7
38	f3-f4	g7-g6
39	Kf2-f3	Nf6-d5
40	Nc3-e4	Bd6-e7

Either 40...Bc4-d3 or 40...Bd4-e2+ (41 Kf3xe2 Re6xe4+) would exchange off some pieces.

41	Rb1-b7+	Kd7-c6
42	Rb7-b2	h6-h5

Now 42...Nd5-f6, exchanging off some pieces, or 42...Nd5-b4, in each case hoping to follow up with Bc4-d5, would be better, but of course Black is still winning.

43	Rb2-c2	Kc6-b5
44	Rc2-b2+	Be7-b4
45	Bd4-e5	Bc4-d3
46	Ne4-d6+	Kb5-c5
47	Rb2-b3	Bd3-c2
48	Nd6-b7+	Kc5-b6
49	Rb3-b2	Re6-c6

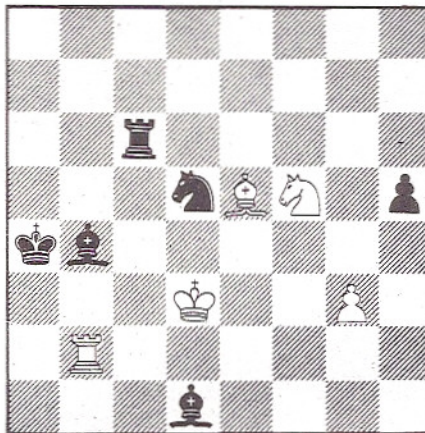
It would be so much simpler to exchange some pieces with 49...Kb6xb7. Now life starts to get rather complicated.

50	Nb7-d6	Bc2-d1+
51	Kf3-e4	Kb6-c5
52 f4-f5	f4-f5	Nd5-c3+
53	Ke4-d3	g6xf5

Only one pawn left now.

54	Nd6xf5	Nc3-d5
55	Be5-d4+	Kc5-b5
56	Bd4-e5	Kb5-c5
57	Be5-d4+	Kc5-b5
58	Bd4-e5	Kb5-a4

Boris knows it's winning and so avoids the draw by repetition.



59	Rb2-a2+	Bb4-a3
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60	Kd3-d4	
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Avoiding the knight fork on b4.

60	...	Nd5-c3
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61	Ra2-a1	Nc3-b5+
62	Kd4-e3	Bd1-c2
63	Ke3-f4	Rc6-c4+
64	Kf4-g5	Rc4-g4+
65	Kg5-f6	Rg4-c4
66	Kf6-g5	Rc4-g4+
67	Kg5-f6	Ka4-b3
68	Ra1-h1	

If White wins Black's last pawn the game is likely to be drawn, but...

68	...	Bc2xf5
69	Kf6xf5	Nb5-d6+
70	Kf5-e6	Rg4-g6+
71	Ke6-d5	Nd6-c4
72	Be5-f4	

White also seems to think that bishops are more valuable than knights and so declines to go in for the variation 72 Rh1xh5 Nc4xe5 73 Rh5xe5 Rg6xg3 although that would be an almost certain draw.

72	...	Rg6-b6
73	Kd5-e4	

Now if 73 Rh1xh5 Rb6-b5+ wins the rook.

73	...	Rb6-b5
74	Rh1-d1	Ba3-b2
75	Rd1-e1	Bb2-e5
76	Re1-b1+	Be5-b2
77	Rb1-e1	Bb2-e5
78	Re1-b1+	

White: Boris Experimental  
Black: Chess Challenger

1 d2-d4 d7-d5 2 c2-c4 e7-e6 3 Nb1-c3 Ng8-f6 4 Ng1-f3 Bf8-e7 5 Bc1-g5 0-0 (Ke8-g8) 6 e2-e3 Nb8-d7 7 Bf1-e2 Nd7-b6 8 c4-c5 Nb6-c4 9 Be2xc4 d5xc4 10 Qd1-a4 Bc8-d7 11 Qa4xc4 Bd7-c6 12 0-0-0. (Ke1-c1) Bc6xf3 13 g2xf3 h7-h6 14 Bg5-f4 Nf6-d5 15 Nc3xd5 e6xd5 16 Qc4-b4 b7-b6 17 Rh1-g1 g7-g5 18 Qb4-c3 Kg8-h8 19 Bf4-g3 c7-c6 20 c5xb6 Qd8xb6 21 Bg3-e5+ f7-f6 22 Be5-g3 Ra8-c8 23 Kc1-b1 Rf8-d8 24 e3-e4 Be7-b4 25 Qc3-e3 c6-c5 26 d4xc5 Bb4xc5 27 Qe3-e2 d5-d4 28 f3-f4 Bc5-d6 29 e4-e5 g5xf4 30 Bg3xf4 f6xe5 31 Bf4xe5+ Bd6xe5 32 Qe2xe5+ Qb6-f3 33 Qe5xf6+ Kh8-h7 34 Qf6-g7 checkmate.

Challenger won the third game to take the match 2-1.

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78 ... Kb3-a4?

The time to avoid the draw by repetition was last move by playing something other than Bb2-e5. But Boris still knows it is winning, so it avoids the repetition at the last possible moment, playing a move which will draw, at best, and which also gives Black excellent losing chances!

79	Rb1xb5	Be5xf4
80	Rb5-c5	Ka4-b4

80...Bf4xg3 would draw very comfortably, but that would mean giving up material, so...

81	Rc5xc4+	Kb4xc4
82	Ke4xf4	Kc4-d5
83	Kf4-g5	Kd5-e4
84	Kg5xh5	Ke4-f5
85	g3-g4+	Kf5-e4

Oh dear, those central square weightings again! The best move here is 85...Kf5-f6. That certainly would have provided a test of Challenger's endgame ability (86 Kh5-h6 would win, other moves would only draw - against best play that is!).

86	g4-g5	Ke4-f5
87	g5-g6	Kf5-e6
88	Kh5-h6	

Assuming there will be no problems in winning the queen ending, then this was the last hurdle. 88 g6-g7 would only draw (88...Ke6-f7 89 Kh5-h6 Kf7-g8 90 Kh6-g6 is stalemate).

88	...	Ke6-f6
89	g6-g7	Kf6-f7
90	Kh6-h7	Kf7-e6
91	g7-g8Q+	Ke6-e5
92	Kh7-g6	Ke5-e4
93	Qg8-c4+	Ke4-e5
94	Kg6-g5	Ke5-d6
95	Kg5-f6	Kd6-d7
96	Qc4-c5	Kd7-d8
97	Kf6-e6	Kd8-e8
98	Qc4-e7	Checkmate

A mammoth tussle!

After the World Championship was over a challenge match was held between the new champion, Challenger, and the runner-up, Boris Experimental. Terry Knight of Competence, the UK distributors of Boris units, staked £2500 on the Boris Experimental winning a best of three game match. Chess Challenger had a great advantage because it was decided to count the Championship game, which Challenger had won, as the first game of the match. The second game of the match was most exciting:

White: Boris Experimental  
Black: Chess Challenger

1 d2-d4 d7-d5 2 c2-c4 e7-e6 3 Nb1-c3 Ng8-f6 4 Ng1-f3 Bf8-e7 5 Bc1-g5 0-0 (Ke8-g8) 6 e2-e3 Nb8-d7 7 Bf1-e2 Nd7-b6 8 c4-c5 Nb6-c4 9 Be2xc4 d5xc4 10 Qd1-a4 Bc8-d7 11 Qa4xc4 Bd7-c6 12 0-0-0. (Ke1-c1) Bc6xf3 13 g2xf3 h7-h6 14 Bg5-f4 Nf6-d5 15 Nc3xd5 e6xd5 16 Qc4-b4 b7-b6 17 Rh1-g1 g7-g5 18 Qb4-c3 Kg8-h8 19 Bf4-g3 c7-c6 20 c5xb6 Qd8xb6 21 Bg3-e5+ f7-f6 22 Be5-g3 Ra8-c8 23 Kc1-b1 Rf8-d8 24 e3-e4 Be7-b4 25 Qc3-e3 c6-c5 26 d4xc5 Bb4xc5 27 Qe3-e2 d5-d4 28 f3-f4 Bc5-d6 29 e4-e5 g5xf4 30 Bg3xf4 f6xe5 31 Bf4xe5+ Bd6xe5 32 Qe2xe5+ Qb6-f3 33 Qe5xf6+ Kh8-h7 34 Qf6-g7 checkmate.

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