APRIL 83

MICRO CHESS

INTELLIGENT SOFTWARE

Tony Harrington reviews the history of David Levy and Kevin O'Connell's computer chess company.

Intelligent Software was founded by David Levy and Kevin O'Connell in 1981. But to trace its origins one has to go back some 12 years in time. For unlike the chess computer manufacturers we have looked at so far, where the drive and initiative has come from entrepreneurs who knew little about chess, both Levy and O'Connell began as professional chess players and chess writers.

With both, chess came first and computers second. O'Connell's introduction into computers began in 1969 when he had a brief spell working for IBM while a student studying history and politics at Exeter.

Levy had a rather more developed background in computers, gleaned during his days at St Andrews, where he studied statistics. But at that time computer chess was in its infancy and was almost exclusively the province of artificial intelligence specialists running programs on university mainframe computers.

O'Connell moved into writing and editing chess books as soon as he left Exeter University. He was in at the start of Batsford's massive publishing exercise and edited around 60 of the Batsford books — as well as having a hand in one way or another in another 38 opening, middle game and end game volumes published by Batsford.

Levy meanwhile concentrated on over-the-board play and won his international master title at a zonal tournament for the World Championship qualifying cycle in 1969. But by the early 1970s he too had become more involved in chess journalism and publishing.

According to O'Connell, the two of them met for the first time in 1970, but the meeting had no significance and contained no hint of the partnership that was to develop. After that they met on and off at various tournaments and functions, each continuing his writing activities independently of the other.

'By mid-1975 it was obvious that, between the two of us, we had secured a largish slice of whatever market there was for chess literature in the country — what we weren't writing, Raymond Keene was. We realised that we were having the same ideas about which books to write at roughly the same time — and that there wasn't much point in two people writing roughly similar versions of the same books. So we decided to pool our resources,' O'Connell remembered.

The two of them founded the Philidor Press. At this stage their interest was still almost completely in 'human' chess. Levy wrote ocasional pieces for the US *Chess* magazine and this led to his being invited to commentate on the games of the ACM computer chess tournament, held annually in the US. So there was some contact with computer chess.

Then, in 1967, Levy took the now famous bet that no computer program would be devised in the next ten years that would be able to beat him or any other master.

It happened by chance — as these things do — at the first major international chess tournament to be held in Dundee, Scotland for 100 years. Levy wasn't playing, but he happened to be at a party held in Edinburgh, made up of a mixed crowd of chess players from the tournament and artificial intelligence specialists from Edinburgh university.

Somehow the subject drifted round to computer chess, and the AI people began telling the chess-players that they were making great progress designing chess playing programs. The chess-players weren't particularly impressed, but the AI people were enthusiastic and so the bet came about. O'Connell was a little uncertain what the original sum was — perhaps £500. But it went up over the next few years as other people took a stake in it.

The bet found its way into the annals of chess literature, and most chess journalists mentioned it somewhere or other in their writing as the years went by.

It turned out to have something of an impact on the O'Connell-Levy partnership in rather an unexpected way. When 1977 came round at last, the bet culminated with Levy playing a match against Chess 4.7 the current world champion running on the CDC Cybero. He won, and the ensuing publicity brought Levy and O'Connell to the attention of Ernest Winkler of SciSys, who had just begun making chess computers and wanted help with the software.

Levy and O'Connell had already, by this stage, gained their first experience of the computer chess marketplace. Towards the end of 1977, before Winkler's approach, they had been contacted by Texas Instruments, which was then planning the launch of the TI99/4 personal computer.

TI wanted consultancy support in the design of a chess program. But this first venture didn't come off too well. As O'Connell put it, 'We gave them some good ideas; they had experts who thought they knew better and botched it up.'

The experience convinced Levy and O'Connell that if the chance came along to design another chess program they would keep control of the project themselves. SciSys gave them that opportunity at the end of 1978.

The two went out and hired a programmer, Mike Johnson (who, readers of this column might remember, won the most recent *PCW* 3rd European Microchess Tournament, in partnership with Dave Wilson). They discovered his chess programming talents during the *PCW* tournament of 1978. (Subsequent *PCW* tournaments have provided Levy and O'Connell with a fertile recruiting ground of proven chess programmers.)

The result of this collaboration was the SciSys Chess Champion Mk3, which sold very well for SciSys and was at one stage endorsed by Anatoly Karpov, according to O'Connell.

For the next three years, Philidor — as the company was still called — did a great deal of work for SciSys. In fact, aside from a brief flirtation with ACT, who wanted a chess program to run on Pet and Apple computers, the two worked almost exclusively for SciSys.

This relationship had its drawbacks as well as its advantages, since chess computer suppliers tend to oscillate between research and development and sales. When a good program comes along, things go quiet for the R & D team while the marketing side takes over and tries to turn the idea into profit.

By the beginning of 1981, it had occurred to Levy and O'Connell that it might be wise to loosen their relationship with SciSys and look for business elsewhere. More or less as a result of this decision, they began to recruit additional chess programming specialists — in particular Richard Lang, whose program Cyrus I won the 1981 *PCW* tournament.

In the summer of 1981 Levy and O'Connell delivered the Mk V module to SciSys. This went on to win the commercial chess computer world championship at Trevemunde — under somewhat clouded circumstances, thanks to withdrawals and bickering among the suppliers — that same year.

In the autumn of 1981 they set up Intelligent Software as a separate company, and went looking for clients and work. As people began to discover that they were no longer writing programs exclusively for SciSys, work began to look for them. Milton Bradley, one of the major toy manufacturers, had decided that sensory chess machines were all very well, but a chess computer that could move its own

pieces would be better still. It wanted someone to design a self-moving robotics chess machine and to program it.

Intelligent Software took the project on, and the machine is now commercially available — but that is a separate tale in its own right, and will have to wait for another column. While this was being developed, O'Connell approached Tandy with an idea for a bridge-tutor program for the Tandy Color Computer. That idea too, is now on sale in the shops (see the January edition of *What Micro).*

In January 1982 O'Connell and Levy went to the Las Vegas electronics fair, as they usually do, to see what the industry was doing or about to do. There they began talking to some people who distributed chess sets in Paris. They had had the idea for some time of marketing an improved version of the Cyrus program in a sensory board machine. But there had always been the logistical problem of manufacturing the units.

The Paris people said they would provide the facilities if Intelligent Software gave them consultancy support — and so the concept of La Regence (the top scoring commercial machine in last year's *PCW* tournament) was born.

According to O'Connell, La Regence has far and away the strongest blitz chess (five seconds a move) program of any commercially available unit. La Regence runs on a Z80 chip, with 12k ROM and 1k of RAM and has a 4 MHz clock. They took it to the ACM blitz tournament in 1981, when it was still on an Osborne microcomputer, and it excelled itself at the 5 seconds a move level. O'Connell reckoned that it destroyed the Cray blitz program (running on a Cray!), beat Chess 4.5 comfortably and only lost to Belle, the world's strongest program at the moment, with a FIDE ranking around the Master level. 'If we'd had anything like the hardware advantages that Belle enjoyed, I rather think that La Regence would have knocked the spots off it,' he commented modestly.

La Regence went on sale in France in November last year, priced at FF 4,000, or around the £400 mark. It isn't quite as grand a set, in appearance, as the Mephisto, but it plays a mean game of chess.

Games

The first game features Richard Lang's Cyrus, before the modifications which turned it into La Regence. The occasion is the 1981 *PCW* tournament. The second game is by La Regence itself, and is from last year's tournament.

White = Advance 2.0; Black = Cyrus (La Regence)

Cyrus's most complicated game in the tournament; complete accuracy in the commentary is not guaranteed. . .

1	e2-e4	c7-c5
2	Ng1-f3	Nb8-c6
3	d2-d4	c5xd4
4	Nf3xd4	Ng8-f6
5	Nb1-c3	d7-d6
6	Bc1-g5	e7-e5?!
7	Nd4-b5	

(Transposing into 'normal' lines, the *Encyclopaedia of Chess Openings* gives 7 Bg5xf6 g7xf6 8 Nd4-f5 with advantage. La Regence has a much larger openings 'book' than did the Cyrus program when it played this game.)

7	. . .	a7-a6
8	Bg5xf6	g7xf6
9	Nb5-a3	Bc8-e6
10	Bf1-c4	

('Theory' gives 10 Na3-c4 or 10 Nc3-d5.)

10	. . .	Qd8-b6?!
11	Bc4xe6	f7xe6

(Now White of course can unsettle the Black king, though the central pawn mass gives it fair protection; after 12 Qd1-h5 + Ke8-e7, White can choose either 13 0-0-0, or else 13 Ra1-b1 and 14 0-0. Instead. . .)

12	Na3-c4?!	Qb6-b4
13	Qd1-e2?	

(He must play 13 Qd1-d3, when (eg) 13 . . . NC6-d4 14 0-0-0 Ra8-c8 15 Nc4-e3 is okay.)

13	. . .	d6-d5?!

(Black is now very probably winning, but he is making things unnecessarily complicated. Instead, 13 . . . Nc6-d4! wins quite comfortably. 14 Qe2-d3 Ra8-c8, and if 15 b2-b3, b7-b5, etc.)

14	Qe2-h5+	

(Or 14 e4xd5 Nc6-d4 15 Qe2-h5+, transposing.)

14	. . .	Ke8-c7

(Looks adequate to keep Black on top, though 14 . . . Ke8-d8 — denying White the subsequent gain of tempo with d5-d6+ — might be a shade better; the play could then be similar to that given in the next four notes.)

15	e4xd5	Nc6-d4!

(And not 15 . . . e6xd5 16 Nc4-e3, when White is out of trouble.)

16	Nc4-e3	

(Or 16 d5-d6+ Ke7-d8 17 Qh5-f7 Qb4xc4 18 Qf7xf6+ Kd8-d7 19 Qf6-f7+. Not 19 Qf6xh8 Nd4xc2+ 20 Ke1-d1 Qc4-d3+ 21 Kd1-c1 Bf8-h6+ 19 . . . Kd7xd6, and Black should consolidate and win, eg, if 20 0-0-0, Qc4-c7 appears to work.)

16	. . .	Qb4xb2
17	d5-d6+	

(17 0-0 Qb2xc3 18 d5xe6 is a possible alternative try, though at the very least Black can emerge with a sound extra pawn after 18 . . . Ke7xe6 19 Qh5-h3+ Ke6-f7 20 Qh3-d7+ Bf8-e7 21 Qd7xe7+ Kf7xe7 22 Ne3-d5+ Ke7-e6 23 Nd5xc3 Nd4xc2.)

17	. . .	Ke7-d8!
18	Ke1-d2	

(Now White has no chance. He had to try 18 0-0 Qb2xc3 19 Qh5-f7, with some sort of attacking chances for the piece, though after, eg, 19 . . . Bf8xd6 20 Qf7xf6+ Kd8-d7 21 Ra1-b1 b7-b5 they shouldn't be sufficient.)

18	. . .	Ra8-c8
19	Nc3-e4	Nd4xc2
20	Ne3xc2	Qb2xc2+
21	Kd2-e3	Rc8-c4
22	Qh5-h4	Bf8-h6+
23	Ke3-f3	

(If 23 Qh4xh6 then 23 . . . Rc4xe4+ 24 Ke3-f3 Qc2-e2+ 25 Kf3-g3 Qe2-g4 mate.)

23	. . .	Qc2-d3+
24	Kf3-g4	Qd3xe4+
25	Kg4-g3	0-1

GAME 2

London 1982 (*PCW* Show)

White=Bogol; Black=La Regence

Bogoljubow Indian Defence

1	d2-d4	Ng8-f6
2	c2-c4	e7-e6
3	Ng1-f3	Bf8-b4+
4	Bc1-d2	Qd8-e7
5	e2-e3	Nb8-c6

(Coincidentally, the day this game was played, Harry Golombek wrote in *The Times,* criticising ex-World Champion Tigran Petrosian for failing to play . . . Nb8-c6 in this very variation. La Regence had obviously read the newspaper before the game started!)

6	Bf1-d3	d7-d5
7	a2-a3	Bb4xd2+
8	Nb1-d2	d5xc4
9	Nd2xc4	0-0
10	0-0	Bc8-d7
11	Ra1-c1	Nf6-d5
12	Qd1-c2	f7-f5

(An ugly move, which leaves Black with a 'hole' on e5, but it is not easy in the short term to take advantage of this concession.)

13	b2-b4	Rf8-f6
14	b4-b5	Nc6-B8
15	a3-a4	Nd5-b4
16	Qc2-b1	Nb4xd3
17	Qb1xd3	a7-a6!

(Now, either White must capture on a6 and allow Black's b8 knight to redevelop, or permit Black to exchange pawns on b5. In either case White gets saddled with an isolated pawn on the queen side.)

18	Nc4-e5	a6xb5
19	Rc1xc7	

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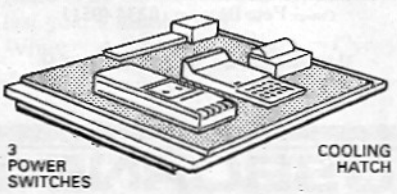

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MICRO CHESS

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(Although it is tempting to put a rook on the 7th rank, I would have preferred 19 a4xb5, since now the passed Black a-pawn becomes a real menace.)

19	. . .	b5xa4
20	Rc7xb7	Qe7-d6
21	Rfl-cl	Rf6-f8
22	Rcl-c7	Rf8-c8
23	Qd3-c4	Rc8xc7
24	Rb7xc7	a4-a3

(Suddenly White is lost — the a-pawn cannot be stopped.)

25	Qc4-c5	Qd6xc5
26	Rc7xc5	a3-a2
27	h2-h3	a2-al=Q+
28	Kgl-h2	Qal-b2
29	Rc5-c7	Qb2-b5
30	Nf3-g5	Ra8-a6
31	Ne5xd7	Nb8xd7
32	Rc7-c8+	Nd7-f8
33	Ng5xh7	Kg8xh7
34	Rc8xf8	Qb5-c6
35	g2-g3	Qc6-f3
36	Rf8xf5	

(Bogol now realised that 36 Kh2-g1 allows mate in two starting with 36 . . . Ra6-al+, and so sacrifices a rook in desperation.)

36	. . :	e6xf5
37	h3-h4	Ra6-al+
38	Kh2-h3	Ral-hl mate

While the above game is not spectacular, it does show how La Regence is able to create modest strategical opportunities from seemingly placid situations (17 . . . a7-a6!) and to capitalise on its positional advantages with great force.

THE MULTI-USER SIGNET

Continued from page 122

McNOS command language that he asked to have it implemented on his single-user CP/M systems as well.)

Prices

Multi-User

1) Hub filestore, 1x400k floppy

hard disk, 5.25 Mb (formatted)	£2695
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2) Satellite case:

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Future developments

A user who is just starting on a microcomputer development which requires only one system now but which could expand to become multi-user later, could well choose a Sig/net system for its development potential. If Shelton maintains its record in exploiting its technical expertise, then it would be expected that other developments would be on the way. I understand that one of these developments is the provision of a local area network facility based upon the Datapoint ARCNET approach. This will be used instead of the current ribbon bus to provide high speed communication over much longer distances, and thus permit the siting of user satellite systems away from the central hub. I must point out however that this is not yet an available product, or, as Guy Kewney so aptly put it in this same magazine 'the future is not now . . .'.

Conclusions

The Shelton Sig/net system is based on good hardware and provides good value for money. The system provides a convenient cost-effective growth-path for the user who wants to start small, but expects to expand to a multi-user system later. The McNOS multi-user operating system provides convenient facilities for users who wish to share data between a number of terminals and a number of CP/M programs, provided this can be done on a scheduled basis (ie, no file being used in

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