

# David vs. 12 Goliaths

by Monty Newborn

It looked like a sure thing: David would quickly polish off his opponents and we would be able to have an early dinner—most likely before midnight! The slugfests between programs to determine a national champion usually begin at 7 p.m. at the ACM Annual Conferences and continue until almost dawn—certainly well past midnight—and for those participating, this means a late gourmet meal at a nearby twenty-four hour diner over which the evening's activities are relished. But tonight, rather than battling each other, the twelve programs were scheduled to take on David Levy, British International Chess Master, in the first simultaneous chess exhibition in history in which a Master could not count on his opponents cringing in respect. Dinner was not too far off.

The scene was a second floor conference room in the Radisson Hotel in downtown Minneapolis; the date was October 19, 1975. The audience of several hundred included both chess experts and computer professionals. On stage were the authors along with teletypes and telephones connecting to remote computers. My role was that of organizer, along with Ben Mittman of Northwestern University, and participant. Data General had been good enough to provide me with a Nova 2 for the event

## "About Computing" continued —

is much more important in (even) pure mathematics, to say nothing of more practical things, than people realize. Every theorem was once merely a hunch. It is important to find its proof, true; but it is almost more important to find something to prove!

8. Aesthetics (elegance, style) count for a lot, and are a lot more practical than "gimmicks" in the long run.

9. Computer books and write-ups (this one included) are hard to read at first, and full of words that nobody bothers to explain.

Suggestion: If you have trouble on this score, plow ahead and keep on reading, regardless of whether you know what the author is saying. A later page may very well explain an earlier one. Then go back to what bothered you, if it still bothers you, make a note of it and lay the book down.

Another day it may come clear, or somebody may be able to answer your questions.

The writer first met computers when he was 40. The result: near-despair until the above technique was used; then things began to come clear. It's like learning a foreign language; speak and hear as much of it as you can, even if half is obscure.

10. The ingenious chaps who invent computer languages (like BASIC, which will probably be what you start with) put in error "traps" to catch certain obvious blunders. But in general, alas,

a. The machine can and will do what you ask it to do, no matter how stupid or wise your orders may be. It doesn't know the difference.

b. The machine can't possibly tell you *what* you should be asking it to do. Of fact and fiction, value and meaning, it knows nothing. "GIGO" (garbage in, garbage out) is an old IBM motto! Good luck on your adventure!

and it served as the only "live" and visible entrant, its lights twinkling as moves for my program OSTRICH were calculated. David has been serving as director of the ACM Tournaments since 1971 and is likely to come into several thousand dollars in 1978 when the computer community fails to produce a program that can defeat him in a match. He accepted a wager in 1968 to this effect from a distinguished group of computer scientists. This simultaneous exhibition would certainly set straight the supporters of the metal monsters!

And so the evening began. It became clear that David intended to take the computers "out of book" as soon as possible and, in general, play somewhat closed positional games. The computers played slowly, taking about 3 minutes per move, while David bounced from one board to another, only seeming to be concerned over his game versus CHESS 4.4 running on a CDC CYBER 175. OSTRICH was holding ground but definitely having the worse of it. One by one David's opponents met defeat, marked visibly by the disconnected telephone and the posting of the results on large display boards in the room. But the games were lasting longer than I expected. David must be playing very safe was my guess; he doesn't want to lose any games or draw any either. The pressure against OSTRICH continued to grow with David building up small gains. But it was now nearing 10 p.m. and there were still about six programs alive! I became completely immersed in my game at this point, losing track of what was happening in the other games. David seemed to be only a few moves from crushing OSTRICH and I was glad to see OSTRICH had made a run of it at least. But then, much to my surprise, David made a weak 25th move giving OSTRICH some chance for equalizing the game and even a chance to gain the lead. OSTRICH saw David's error and made the correct reply, and David was in trouble—but not enough. David, playing at a slight material disadvantage, gradually recaptured the lead and defeated OSTRICH on move 50. Thus, at about 11 p.m. OSTRICH joined the ranks of about 8 other programs that had gone down to defeat. I could now relax and watch David finish off his other opponents.

But it didn't happen that way. David found himself behind in two games and fought to survive until well past midnight when his opponents agreed to draws. CHESS 4.4, the program of David Slate and Larry Atkin of Northwestern University, and TREEFROG, the work of Ron Hansen, Russell Crook, and Gary Calnek of the University of Waterloo, both were ahead but unable to develop a strategic plan leading to a resignation by their mortal opponent.

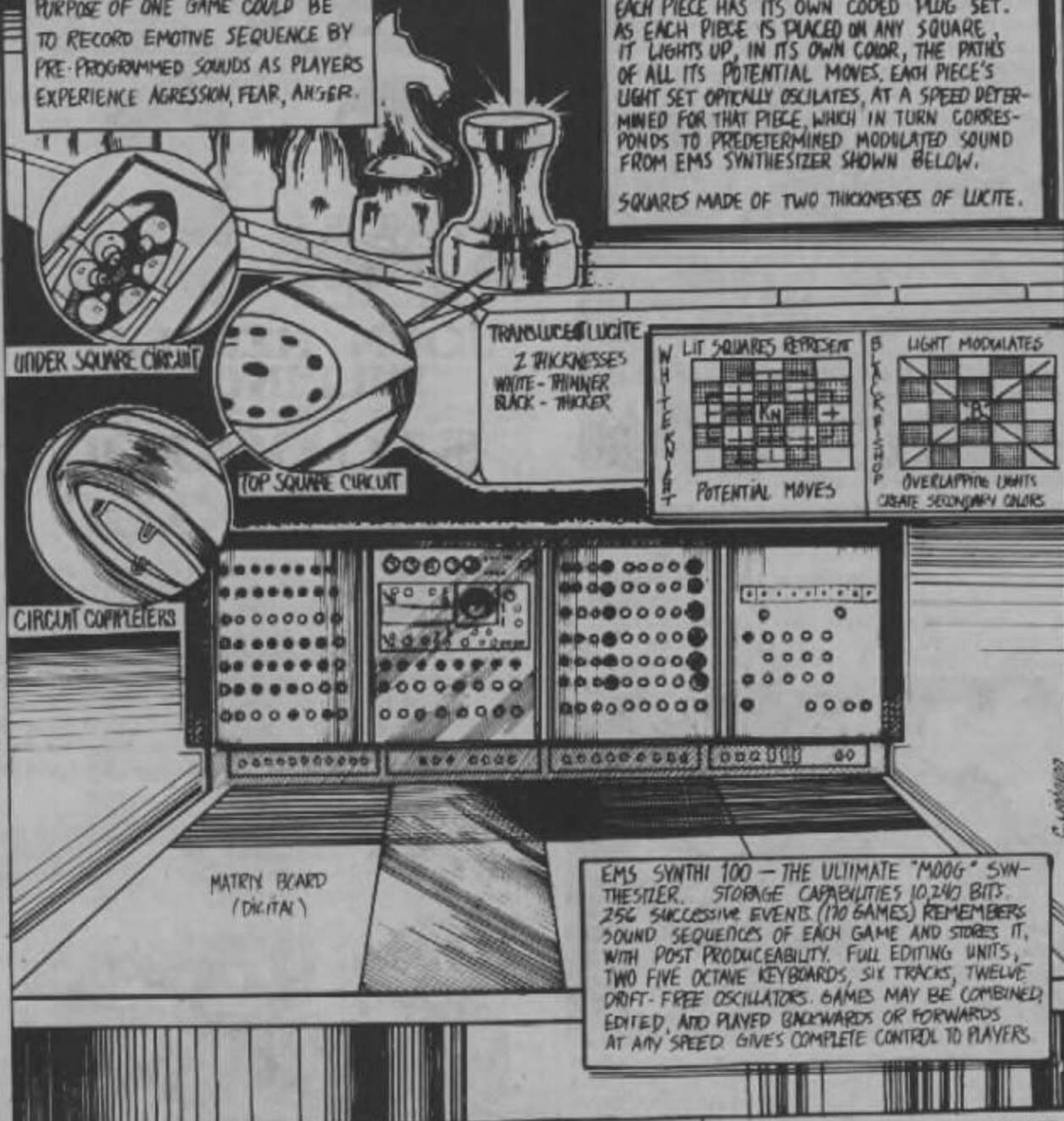
So once again at 1 a.m. we went to the local diner to rehash the day's events and speculate on how numbered David's days are. On a head-to-head match, ten years may still be safe, but David—beware!

# CONCEPTUAL CHESS

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