

# Chess Computer Loses Game in a King-Size Blunder

By JOHN C. DEVLIN

The world's first major chess tournament played by computers proved yesterday that masters have little to fear from machines and that not even a million-dollar electronic marvel is blunder proof.

In fact, the computers, in their shortcomings, were almost human.

The computer contestants were based in Texas, Illinois, New Jersey and New York, with the tournament operating out of a control center on the third floor of the New York Hilton Hotel. The tournament was directed by Prof. Monroe Newborn of the department of electrical engineering and computer science at Columbia University.

Professor Newborn originated the plans for the tournament, which opened Monday night and is expected to end tonight.

Last night the play drew nearly 300 spectators, who watched in more-or-less appreciative silence as the computers' moves were transferred to large posterlike chessboards.

## Technical Delay

Among those who have dropped by to watch have been international grandmaster Pal Benko and Al Horowitz, chess editor of The New York Times.

Six teams are competing, with three games going on simultaneously.

The first game—which began 45 minutes late because of technical difficulties in getting the equipment in-

stalled and hooked up—was won by a \$7-million Columbia University computer programmed by Hans Berliner, the national postal chess champion.

Its opponent was a computer programmed by Tony Marsland of the computing science department of the University of Alberta, Canada. The Canadian computer lost when, on its ninth

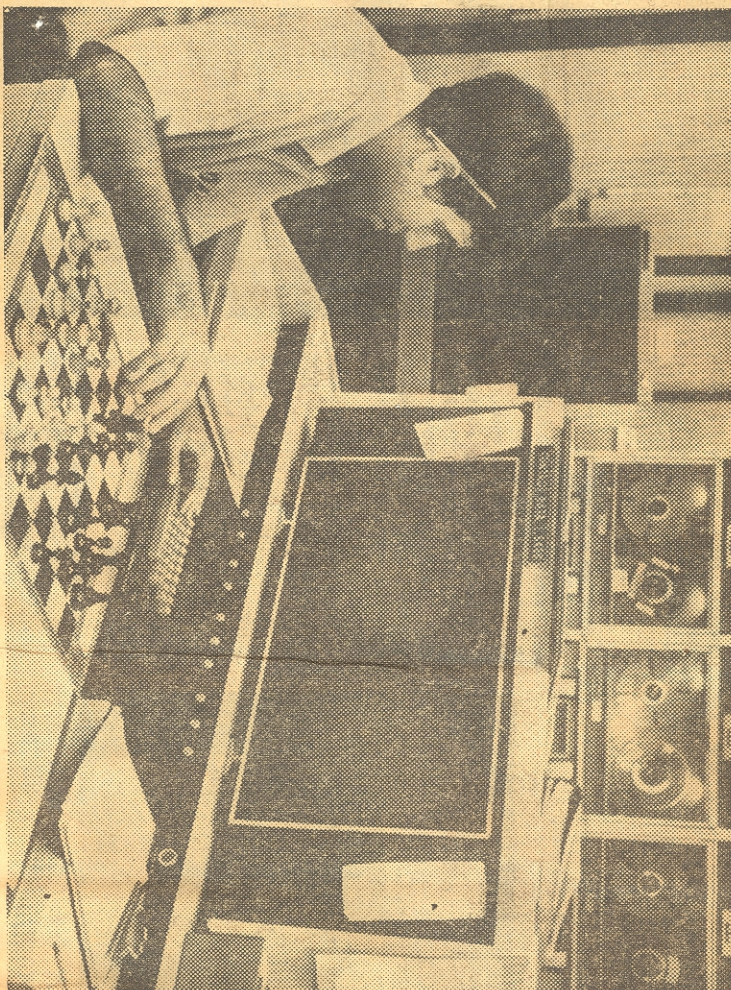
move, the Columbia computer, playing Black, attacked the White king and queen simultaneously.

As in ordinary tournaments, each side was permitted a maximum of 40 moves in two hours of play. But the Columbia machine used only 12 minutes for its winning game; the loser took 20 minutes.

Mr. Berliner, who is study-

ing at the Carnegie-Mellon University Computer Center in Pittsburgh, said he had spent "two years, on and off," programming chess strategy into the computer.

The computers need human help during play. A move made here is relayed by telephone line to the opposing computer. The received move is fed into the opposing computer by a human. The com-



Edward Kitch, A.P., for The New York Times

In Evanston, Ill., David Slate, a programmer for Northwestern University's Vogelback Computing Center, making a move as ordered by computer, which was programmed for event.

puter then "thinks" out its move and sends it by phone to New York, where again a human feeds the response into the computer.

In Game No. 2 the winning computer was programmed by Keith Gortlan, representing a group from Northwestern University, in Evanston, Ill., playing against a computer programmed by Dennis Cooper of the Bell Telephone Laboratories, Inc., Whippany, N. J.

In Game No. 3 a computer programmed by Chris Daley of the Goddard Space Flight Center, Goddard, Md., beat one programmed by a group with a computer at Texas A. & M. University, College Station, Tex., headed by Franklin Cerniti and Rolf Smith, both Air Force captains.

## Programmers' Hobby

Professor Newborn said that on the average a computer took one to three minutes to analyze a situation and make its move.

The cost of programming the computers was almost negligible because the programmers did it mainly as a hobby. The chore took about two years.

As for the scientific value of the computer chess competitions, the professor said:

"There has been this fundamental question as to whether computers can think. To a limited degree this competition shows how well a computer can cope with a complicated question."

By chance the tournament fell on the 200th anniversary of the appearance of the world's first chess automaton, called The Turk. Introduced in the Royal Palace in Vienna by its inventor, Baron Wolfgang von Kempelen, it defeated almost all comers—including Napoleon—and baffled some of the best minds in Europe.

The automaton was the figure of a Turk seated at a cabinet on which was a chess board. Actually the Turk was operated by a man hidden by an ingenious set of false panels.

## A Computer's Limitations

Some modern chess players have been known, upon losing, to weep, sweep the pieces from the board or even smash the board in fury. Mr. Horowitz remarked: "That's something the computers can't do."

Mr. Horowitz also analyzed the game between the Columbia and Alberta computers. He said,

"White's first move establishes the opening as the English, and the opening is orthodox until White's third move. The deployment of White's queen with 3Q-Q3 reflects strategy of control of the center, programmed into the machine, though there are better ways of achieving this goal.

"Theoretically, Black goes astray on his sixth turn. He could gain a pawn with 6... OXP, but on his eighth turn, White blunders by bringing out his king, making it a target, and by walking into what is known as a pin, which cost a piece."

Had a man played White's ninth move, he said, it would have been called a "finger-fehler"—a slip of the fingers—but since a computer has no fingers it will have to go down as an electronic blunder. As its next move the computer resigned.

The score of that game follows:

## ENGLISH OPENING

Alberta	Columbia
1 P-Q4	1 N-KB3
2 P-Q4	2 P-K3
3 Q-Q3	3 N-B3
4 N-KB3	4 P-Q4
5 N-K5	5 PXP
6 QXB	6 B-Nch
7 B-Q2	7 BxBe
8 KxB	8 N-N
9 Q-B5	9 N-K5ch
Resigns	



# New York Times

2 SEP 70

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At the New York Hilton Hotel, participants and spectators watch progress of three games being run simultaneously during computer chess championship  
Tyrone Dukes





BURROUGHS B-5500 XALGOL COMPILER LEVEL 27 TUESDAY, 8/11/70, 2:07 PM.

BEGIN COMMENT THIS PROGRAM NO LONGER REQUIRES PERMANENT DISC STORAGE

START OF SEGMENT \*\*\*\*\* 2

FOR THE GAME-RECORD AND THE TREE. THE TREE IS HELD IN MEMORY ARRAYS  
STATES AND MOVES. THE GAME-RECORD IS ON A "SCRATCH" FILE; \* 1 AUG

COMMENT TO B-5500 OPERATOR FOR YOUNG AND RUBICAM.

PLEASE MAIL THIS LISTING TO

DR. T.A. MARSLAND, TELEPHONE 201-949-7310

ROOM 4E-618,

BELL TELEPHONE LABS.,

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MANY THANKS, TONY M.

% PROGRAM WRITTEN FOR THE B-5500 IN B-6500 COMPATIBLE ALGOL.

% LAST REVISION 1 JULY 1970

COMMENT WITA, A CHESS PLAYING PROGRAM BY T.A. MARSLAND. \*\*\*\*\*

MOST OF THE I/O ROUTINES WERE

TAKEN FROM A PROGRAM COMPLETED BY R.W. STUBBLEFIELD IN 1967.

WORK ON THE CURRENT VERSION BEGAN AT THE UNIVERSITY OF

WASHINGTON IN MAR 1968

AND IS BEING CONTINUED AS A HOBBY WHILE AT BELL LABS., HOLMDEL.

\*\*\*\*\*PREAMBLE\*\*\*\*\*

(\*DO YOU WANT TO PLAY BOTH SIDES?---COMPUTER)

IF ("YES"--USER) THEN

(\*COMPUTER TO PLAY ITSELF---COMPUTER)

IF ("YES"--USER) THEN COMPUTER TO PLAY BOTH SIDES ELSE

BEGIN USER MUST INPUT MOVES FOR BOTH WHITE AND BLACK.

END

(\*DO YOU WANT A NEW GAME?---COMPUTER)

IF ("YES"--USER) THEN

BEGIN COMPUTER SETS BOARD TO A NEW GAME,

PLAY: IF USER PLAYS BOTH SIDES THEN

00000100 0000

00000200 0000

00000300 0000

00001000 0000

00001100 0000

00001200 0000

00001300 0000

00001400 0000

00001500 0000

00001600 0000

00001700 0000

00001800 0000

00001900 0000

00002000 0000

00002100 0000

00002200 0000

00002300 0000

00002400 0000

00002500 0000

00002600 0000

00002700 0000

00002800 0000

00002900 0000

00003000 0000

00003100 0000

00003200 0000

00003300 0000

00003400 0000

00003500 0000



END OF WRAPUP;

INITIALIZE; IF FALSE THEN

STARTS: PRINTGAMERECORD; WRITE(ITY,TRACER);

SKIP(2); COUNT := 0; REALTIME := STARTIME := TIME(1);

HUB;

STOP: SKIP(2);

WRAPUP;

END.

NUMBER OF ERRORS DETECTED = 0. COMPILATION TIME = 2403 SECONDS. *! should be 97secs con! must be elapsed time*

PRT SIZE = 355; TOTAL SEGMENT SIZE = 6601 WORDS; DISK SIZE = 360 SEGS; NO. PGM. SEGS = 117  
391 6847 132

ESTIMATED CORE STORAGE REQUIREMENT = 9515 WORDS.  
12340

WITA 2

00248900 0434

00249000 0434

00249100 0434

00249200 0435

00249300 0440

00249400 0443

00249500 0444

00249600 0445

00249700 0446

2 IS 449 LONG, NEXT SEG 1

1 IS 2 LONG, NEXT SEG 0

117 IS 69 LONG, NEXT SEG 0