The Sixteenth
ACM North American
Computer Chess Championship

Denver, Colorado
October 13-15, 1985
A Special Event at ACM-85

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WELCOME AND OVERVIEW

For the sixteenth consecutive year, the ACM is hosting a major computer chess event at its Annual Conference. In the early years the programs barely played respectable chess, but over the years they have gradually improved to the point where they now play at the Master level. And there is general optimism that they can improve more. During the course of the tournament, the authors will have the chance to discuss their latest ideas with their colleagues and get new ideas to implement in their own programs.

While the field is a bit smaller than usual, the quality is quite strong. Robert Hyatt, Burt Gower and Harry Nelson will use a four processor Cray computer to defend their ACM title. Their program, CRAY BLITZ, won the world championship in 1983 at the ACM Annual Conference in New York. It will face strong competition from several programs including BEBE, runner-up for the world championship in 1983, CHAOS, HITECH, which searches 175,000 nodes/second using specially designed VLSI circuitry, and PHOENIX, running on a network of VAX 780's and SUN workstations. An exciting four rounds is anticipated.

The audience might observe that the computers are getting bigger and faster every year. This year, there are three multiprocessing systems, two Cray computers, two Amdahl computers, one home brewd (BEBE), and a couple of strong microcomputers. There are very exciting things happening in the world of computer architecture and chess.

In addition to the tournament, a panel discussion on "Chess programs: from the basement to the marketplace" should provide the audience with an interesting view of the commercial chess world. A technical session will feature two papers on some of the latest developments. And—a special Turing Test will be given on Monday, October 14th, to see who is best at telling man from machine.

Rick Wettekind and Garth Courtois have done an excellent job in handling the local arrangements and we want to extend them a big thanks. A thanks also goes to Mike Valvo, who will serve again as our Tournament Director. Last but not least, the participants deserve a special thanks for coming here, given all the problems of putting together and running increasingly more complex systems. We hope the audience enjoys the show; feel free to ask questions and express your emotions and opinions.

Monty Newborn, Chairman, ACM Computer Chess Committee
Hans Berliner, Tony Marsland, Kathe Spracklen,
and Ken Thompson, Members.
IMPORTANT TIMES AND PLACES

Required meeting of all participants: 12:00 pm, Sunday October 13th in the Breckenridge Room.

Schedule of Rounds:

Round 1: 1:00 pm Sunday October 13th
Round 2: 7:30 pm Sunday October 13th
Round 3: 7:30 pm Monday October 14th
Round 4: 7:30 pm Tuesday October 15th

Location: The tournament will take place in the Breckenridge Room of the Denver Raddison Hotel.

Admission: Included in Same-day Conference Registration, or $5/day or $10 for all three days.

ACM Computer Chess Committee Luncheon: 12:00 noon Monday October 14. Non-committee members are welcome to attend. Place to be announced.

Turing Test: Monday October 14 in the Breckenridge Room at 1:30 pm.

ICCA Meeting: October 14 at 5:30 pm in the Breckenridge Room.

Panel Session: "Chess Programs: From the Basement to the Marketplace," Tuesday October 15th at 2:00 pm.

Technical Paper Session: Tuesday October 15 at 4:00 pm.

Awards Luncheon: Wednesday October 16 at 12:00 noon.

MATING DANCE PERFORMED BY OSTRICHES ON "NOVA"
# Scorecard

ACM's Sixteenth North American Computer Chess Championship

<table>
<thead>
<tr>
<th>Team</th>
<th>Rounds</th>
<th>Total Points</th>
<th>Final Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. AWIT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. BEBE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. CHAOS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. CRAY BLITZ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. HITECH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. INTELLIGENT SOFTWARE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. LACHEX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. OSTRICH</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>9. PHOENIX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. SPOC</td>
<td></td>
<td></td>
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</tbody>
</table>

Code:  
- Number of opponent  
- Total points
PARTICIPANTS IN THE ACM'S SIXTEENTH NORTH AMERICAN COMPUTER CHESS CHAMPIONSHIP

AWIT
Tony Marsland, Computing Science Department, University of Alberta, Edmonton, Alberta, Canada, T6G 2H1.

BEBE
Tony Scherzer, SYS-10 Inc., 2117 Stonington Avenue, Hoffman Estates, Illinois 60195.

CHAOS
Mike Alexander, Fred Swartz, and Jack O'Keefe, c/o FS, Computing Center, University of Michigan, 1075 Beal Avenue, Ann Arbor, Michigan, 48109.

CRAY BLITZ

HITECH

INTELLIGENT SOFTWARE

LACHEX
Burton Wendroff, MS B284, Los Alamos National Laboratory, Los Alamos, New Mexico, 87545.

OSTRICH
Monty Newborn, School of Computer Science, McGill University, Montreal, Quebec, Canada, H3A2K6.

PHOENIX
Jonathan Schaeffer, Department of Computer Science, University of Alberta, Edmonton, Alberta, Canada, T6G 2H1.

SPOC

Standby:
BELLE
Ken Thompson, Joe Condon, c/o KT, Bell Laboratories Room 2C 519, Murray Hill New Jersey, 07974.
## History of the Major Tournaments

### World Championships

<table>
<thead>
<tr>
<th>Year</th>
<th>City</th>
<th>Winner</th>
<th>Runner-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974</td>
<td>Stockholm (at IFIPS-74)</td>
<td>KAISSA; Donskoy, Arlazarov ICL 4/70</td>
<td>CHESS 4.0; Slate, Atkin, CDC 6600</td>
</tr>
<tr>
<td>1977</td>
<td>Toronto (at IFIPS-77)</td>
<td>CHESS 4.6; Slate, Atkin, CDC Cyber 176</td>
<td>DUCHESS; Truscott, Wright, Jensen, IBM 370/165</td>
</tr>
<tr>
<td>1980</td>
<td>Linz</td>
<td>BELLE; Thompson, Condon, PDP 11/23 with special hardware</td>
<td>CHAOS; Alexander, Swartz, UBC, Berman, O., Keefe, Amdahl 470/V8</td>
</tr>
<tr>
<td>1983</td>
<td>New York (at ACM-83)</td>
<td>CRAY BLITZ; Hyatt, Gower, Nelson, Cray X-MP</td>
<td>BEBE; Scherzer, Chess Engine</td>
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</table>

### ACM's North American Championships

<table>
<thead>
<tr>
<th>Year</th>
<th>City</th>
<th>Winner</th>
<th>Runner-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>New York</td>
<td>CHESS 3.0; Slate, Atkin, Gorlen, CDC 6400</td>
<td>Daly Chess Program; Daly, King, Varian</td>
</tr>
<tr>
<td>1971</td>
<td>Chicago</td>
<td>CHESS 3.5; Slate, Atkin, Gorlen, CDC 6400</td>
<td>TECH; Gillogly, PDF 10</td>
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<tr>
<td>1972</td>
<td>Boston</td>
<td>CHESS 3.6; Slate, Atkin, Gorlen, CDC 6400</td>
<td>OSTRICH; Arnold, Newborn, DG Supernova</td>
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<tr>
<td>1973</td>
<td>Atlanta</td>
<td>CHESS 4.0; Slate, Atkin, Gorlen, CDC 6400</td>
<td>TECH II, Baisley, PDP 10</td>
</tr>
<tr>
<td>1974</td>
<td>San Diego</td>
<td>RIBBIT; Hansen, Crook, Parry, Honeywell 6050</td>
<td>CHESS 4.0; Slate, Atkin, CDC 6400</td>
</tr>
<tr>
<td>1975</td>
<td>Minneapolis</td>
<td>CHESS 4.4; Slate, Atkin, CDC Cyber 175</td>
<td>TREEFROG; Hansen, Calnek, Crook, Honeywell 6080</td>
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<tr>
<td>1976</td>
<td>Houston</td>
<td>CHESS 4.5; Slate, Atkin, CDC Cyber 176</td>
<td>CHAOS; Swartz, Ruben, Winograd, Berman, Toikka, Alexander, Amdahl 470</td>
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</tbody>
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### ACM's North American Championships (continued)

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Chess Engine 1</th>
<th>Analytical Engine</th>
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<tbody>
<tr>
<td>1977</td>
<td>Seattle</td>
<td>CHESS 4.6; Slate, Atkin, CDC Cyber 176</td>
<td>DUCHESS; Truscott, Wright, Jensen, IBM 370/168</td>
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<tr>
<td>1978</td>
<td>Washington</td>
<td>BELLE; Thompson, Condon, PDP 11/70 with chess hardware</td>
<td>CHESS 4.7; Slate, Atkin, CDC Cyber 176</td>
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<tr>
<td>1979</td>
<td>Detroit</td>
<td>CHESS 4.9; Slate, Atkin, Cahlander, CDC Cyber 176</td>
<td>BELLE; Thompson, Condon, PDP 11/70 with chess hardware</td>
</tr>
<tr>
<td>1980</td>
<td>Nashville</td>
<td>BELLE; Thompson, Condon, PDP 11/70 with chess hardware</td>
<td>CHAOS; Alexander, O'Keefe, Swartz, Berman, Amdahl 470</td>
</tr>
<tr>
<td>1981</td>
<td>Los Angeles</td>
<td>BELLE; Thompson, Condon, PDP 11/23 with chess hardware</td>
<td>NUCHESS; Blanchard, Slate, CDC Cyber 176</td>
</tr>
<tr>
<td>1982</td>
<td>Dallas</td>
<td>BELLE; Thompson, Condon, PDP 11/23 with chess hardware</td>
<td>CRAY BLITZ; Hyatt, Gower, Nelson, Cray 1</td>
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<tr>
<td>1983</td>
<td></td>
<td>Not held as the North American Championship that year but as a World Championship. See the information above on these championships.</td>
<td></td>
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<tr>
<td>1984</td>
<td>San Francisco</td>
<td>CRAY BLITZ; Hyatt, Gower, Nelson, Cray X-MP (4-processor)</td>
<td>BEBE; Scherzer, Chess Engine and FIDELITY EXPERIMENTAL; Spracklen, Spracklen, 6302-based Fidelity machine.</td>
</tr>
</tbody>
</table>
ACM's Fifteenth North American Computer Chess Championship

D. Kopec  San Diego State University
M. Newborn  McGill University

CRAY BLITZ, the current world champion chess program written by Robert Hyatt, Albert Gower, and Harry Nelson of the University of Southern Mississippi, took first place in the ACM Fifteenth North American Computer Chess Championship held during the Association's 1984 annual conference. Running on a four-processor CRAY X-MP computer, CRAY BLITZ won the four-round Swiss System tournament with a perfect 4-0 score, a full one-point margin over its nearest rival. During the past three years CRAY BLITZ has established itself as the most successful of all the programs, having been runner-up in the 1982 ACM tournament and winner of the 1983 World Championship before its triumph in this event.

The outcome of the competition was far from certain until the contenders were well into the games of the final round. NUNCHESS had maintained a strong position against CRAY BLITZ and it seemed possible that no less than four programs of the fourteen competing might tie for first place with identical 3-1 scores: CRAY BLITZ and NUNCHESS, FIDELITY EXPERIMENTAL, and the winners of the BEBE versus NOVAG EXPERIMENTAL and CHAOS versus PHOENIX games. Nevertheless, CRAY BLITZ prevailed when NUNCHESS failed to press its advantage, leaving three teams one point behind the winner.

BEBE (Tony Scherzer, SYS-10 Inc., Hoffman Estates, Illinois) and FIDELITY EXPERIMENTAL (Dan and Katie Spracklen, Fidelity Computer Products, San Diego) shared second place with identical 3-1 scores and equal tie-break points. BEBE, playing on a custom-built bit sliced machine, also tied for second place last year. FIDELITY EXPERIMENTAL's tie for second place this year was the best performance by a microcomputer program to date, only losing to CRAY BLITZ in the first round.

CHAOS took fourth place with the same 3-1 score as the two second-place winners but scored lower on tie-break points. One of the oldest and most consistent of the participants, CHAOS, also suffered its only defeat to CRAY BLITZ.

A fifth-place score of 2.5/4 by BELLE (Ken Thompson, Joe Condon, Bell Laboratories) was surprisingly low for the former world champion and the only USCF master-rated program in the event.

Tony Marsland (moderator) along with panel members Robert Hyatt, Monroe Newborn, Tony Scherzer, and Ken Thompson held a panel discussion entitled "Chess on Nonstandard Computer Architectures," which focused on special purpose chess hardware (Scherzer, Thompson) and parallel search systems (Hyatt, Marsland, Newborn). By the end of the discussion, a long-familiar discontent was reiterated by several members of the audience: What has happened to the knowledge representation approach and the attempts to model human cognition through chess programming?

THE GAMES

Following are two annotated games and a listing of moves from a third. Readers interested in the results of other recent ACM tournaments will find them reported in the September 1983 and August 1984 issues of Communications.

Symbols
! = A very good move
? = An interesting move
?! = A dubious move
? = A blunder
?? = A losing move

Round 2

BELLE--NUCHESS

Sicilian Defense

In chess games between relatively well-matched human opponents a material advantage plays a significant role in the final outcome. This is ordinarily the case in computer chess games as well, where material takes the highest priority. However, there are special cases (positions) wherein the normally accepted relative values of the pieces do not hold true and some knowledge or deep understanding of the position is of much greater importance. In such situations a sacrifice is often required to transform a material advantage into a winning position. We see in the following game that BELLE was not quite ready to make the necessary sacrifice. BELLE managed to win NUCHESS's queen for two minor pieces. However, some material sacrifice (such as a rook for an advanced pawn and knight) was necessary for BELLE to take advantage of its material lead and remove Black's remaining trump. Instead, BELLE tried to maintain a material advantage at all costs and gradually became entangled in an uncharac-
teristically passive and hopeless position.

1. e4 c5 2. c3
The "c3 Sicilian" has been in
BELLE's library for the past few
years and NUCHESS may well have
been prepared for it.

2. ... e6 3. d4 cxd4 4. cxd4 d5
The game has now transposed in
a queen's pawn opening and thus
White's isolated queen-pawn rep-
resents both a strength (space) and
a potential weakness.

7. ... Nc6 8. Nf3 b6
A provocative move in that Black
delays casting kingside (e.g.,
7... Be7) in order to seek the most
active deployment of its queen's
bishop.

9. 0-0 Be6 10. Re1 Bb4
11. Nc3 0-0 12. a3 Be7
13. Bg5 Qd6
Well played. NUCHESS develops ac-
tively around the queen's pawn.

14. b4?
Before this move both programs
have played logically, deploying
their forces as two experienced hu-
mans might, while refraining from
any unnecessarily committal moves.
The text is weakening and anti-
positionally, giving Black potential en-
try points on the queen bishop's file
via the c2, c3, and c4 squares.

14. ... Be4 15. Ne5 b5?
Interestingly, although instead Black
should now safely liquidate with
15... Nxe5 16. dxe5 Qxd1
17. Raxd1 Nd5 etc., the text is also
punishable by 16. Nxc6 Qxc6

16. Bxf6 Bxf6 17. Ne4!

Position after 17. Ne4!
Black is now confronted with an
attack on its queen (which must
guard the queen's knight on c6) and
the threat of 18. Nxc6+ and if
18. ... gx6, then White can force
mate starting with 19. Bh4+!!
then if 19. ... Kh7 (or 19. ... Kh8
20. Qh5! 20. Qh5+ Kg7 21. Qg4+
Kh7 (or h8) 22. Re3. Black most
likely saw all this. The only way,
however, that Black could have
avoided this whole mess was to
have played something other than
15. ... b5.

17. ... Bxe5 18. Nxd6 Bxd6
With Black having only a bishop
and knight for a queen, White's vic-
tory should be a matter of simple
technique, but it does require a plan
and some simple exchanges.

19. Rh3 Ne7 20. Bxc4?
Better was first 20. Rcl or 20. Qe2 to
avoid giving Black a passed pawn.
But BELLE, feeling itself well ahead,
was anxious to reduce material.

20. ... Bxc4 21. Re1 Rxc4
22. Qe2 c3 23. Qa6?
A poor excursion. 23. Qd3 Nxd5
24. Re3+ Bf6 25. Rc2 would lead to a
favorable transition ensuring
White's victory. But while ahead,
BELLE must have felt no compul-
sion to sacrifice material.

23. ... Bf4 24. Rb2 Rxa8
25. Qe5+ Nc7 26. Re2 Bd2
27. Qe6 g6 28. Re4 Rf7
During the past nine moves White
has completely lost the thread of the
game while Black's position has
been strengthened.

29. Kh1 Rf8 30. Rh4 Bg5
31. Rh3 Be7
Unwilling to sacrifice, BELLE spurns
a number of opportunities to sim-

<table>
<thead>
<tr>
<th>Program</th>
<th>Authors</th>
<th>Computer</th>
<th>Points</th>
<th>Place</th>
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<tbody>
<tr>
<td>CRAY BLITZ</td>
<td>Hyatt, Gower, Nelson</td>
<td>Cray X-MP (4 processor)</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>BEBE</td>
<td>Scherzer</td>
<td>Custom-built bit-sliced machine</td>
<td>3</td>
<td>2</td>
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<tr>
<td>FIDELITY EXP</td>
<td>Spracklen, Spracklen</td>
<td>6502-based Fidelity machine (at site)</td>
<td>3</td>
<td>2</td>
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<td>CHAOS</td>
<td>Alexander, Swartz, O'Keefe, Berman</td>
<td>Amdahl 5860</td>
<td>3</td>
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<td>BELLE</td>
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<td>PDP 11/23 with special hardware</td>
<td>2.5</td>
<td>5</td>
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<td>NUCHESS</td>
<td>Slate, Blanchard</td>
<td>Cray 1M</td>
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<tr>
<td>PHOENIX</td>
<td>Schaeffer</td>
<td>Amdahl 5820</td>
<td>2</td>
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<td>NOVAG EXP</td>
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<td>INTELLIGENT</td>
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<td>Apple II (at site)</td>
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<td>SOFTWARE EXP</td>
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<td>SCHACH 2.7</td>
<td>Engelbach</td>
<td>Burroughs 7900</td>
<td>1.5</td>
<td>10</td>
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<td>Newborn</td>
<td>Mitlproc. sys. (8 Novas)</td>
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<tr>
<td>AWIT</td>
<td>Marsland</td>
<td>Amdahl 5860/2</td>
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<td>12</td>
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<tr>
<td>MERLIN</td>
<td>Kandil, Wagner, Horacek</td>
<td>CDC Cyber 170</td>
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<td>13</td>
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<tr>
<td>XENARBOR</td>
<td>Miller</td>
<td>IBM 3081</td>
<td>0</td>
<td>14</td>
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</tbody>
</table>

Note: Teams finishing with an equal number of points were ordered based on the number of points won by their opponents. If a tie
remained, their opponents' opponents' points were counted. BEBE and FIDELITY EXP were still tied after this was done.
Position after 35 ... a6.

Suddenly Black forces a dangerous opening of files on the queenside.

36. bxa6 Rb6 37. a7 Rb7
38. Ra1 Rxa7 39. Qd1 Rb2
White’s continuous passive play enables this to be the decisive incursion.

40. f3 c2 41. Qf1 Bg5 42. g3 Rxb7
43. f4 Rf1 44. Rf3 Bf6 45. f5 Bx4
46. Rxb1 cxb1 = Q (0–1).

Round 3

CRAY BLITZ-BEBE
Sicilian Defense

1. e4 c5 2. d4
White initiates the Morra Gambit which can lead to a dangerous attack if Black does not know the theoretical replies.

2. ... cxd4 3. Nf3

3. ... Nc6 4. Nxd4 Nf6
5. Nc3 d6 6. f4
A very aggressive continuation, which Black meets accordingly with a sharp reply. Other quieter moves for White are 6. Bc4, 6. Be2, and 6. Bg5.

6. ... Qb6 7. Nb3 e5
This move continues the sharp play, although 7. ... e6 was a viable, more solid alternative.

8. Qe2!
A fine move (probably not in CRAY BLITZ’s book) preparing to drive Black’s queen with 9. Bxe3.

9. ... Bg4 9. Qb5 Qxb5
10. Bxb5 a6?
A time-wasting move whose defects will only show up later. Better was 10. ... Bd7 with a sound position. Now the threat of f5 trying to trap the bishop on g4 will persistently loom, although here 11. f5 fails to Nxe4 12. Nxe4 Bxf5, etc., with good compensation for the piece.

11. Bxc6+ bxc6 12. 0–0 Rba4?
Suddenly Black’s position is difficult. Tactical resources still save its bishop now after 13. f5 d5 14. h3 d4, etc. However, because the bishop on g4 is not safely placed, White has a significant lead in development.
Black’s rook does not really threaten and it should hasten to castle kingside instead.

13. Na5 Bd7 14. Rd1 Ng4?
15. h3 Nf6 16. No4 Rb+ 17. b3!

Position after 16. ... Rb4
An excellent move that highlights the difficulties in Black’s position and illustrates the flaws in BEBE’s play.

17. ... d5 18. exd5 Be3+
In a desperate position, BEBE again tries to find salvation through tactics, but to no avail. There are already too many problems with its position.

19. Kh2 Bd4 20. dx6 Bxh3
21. Nf6+ White can choose from a number of winning continuations, e.g., 21. Kxh3
Bxc3 22. c7 Kg4 23. Ra8
23. Rd8 23. Ba3, which gives Black not even a glimmer of hope.

20. ... Ke7 22. Kxh3 Kxd6
On 22. ... Bxc3 23. Ba3 wins anyway.

23. Ba3 a5 24. Bxb4+ axb4
25. Nb5+ Kxc6 26. Nxd4+ exd4
27. Rxh4
White now simply exploits its big material advantage.

27. ... Nc5 28. a3 bxa3
29. c4 Nb4 30. Rxa3 Rb8
If 30. ... Ne2 31. Ra6+ Kb7

31. Ra7 Re3 32. Nxa4 Rb4
33. Rd8 Rxb3 34. Re8+ Kd4
35. Rxf7 g6 36. Rxe7 Rb6
37. g3 (1–0).

Round 4

NUCHESS-CRAY BLITZ
English Opening

NUCHESS played a superb final-round game against CRAY BLITZ. NUCHESS maintained a strong initiative deep into the end game before a "breakdown," due to its lack of understanding of the concept of an outside passed pawn, which CRAY BLITZ capitalized on after

45. Rxb6?.

1. c4 e5 2. Nc3 Bb4 3. d3 Bxe3
4. dx3 Ne7 5. g3 d6 6. cxd3 Qxd5
7. Qxd5 Nxd5 8. Bg2 Nxb6 9. a4 0–0
10. a3 Nc6 11. Rd4 Ne6 12. a3 Nc5
Bxb7 16. Bxb7 Nxb7 17. Nf3 Rd5
18. c4 Ra5 19. 0–0 Ra2 20. Rd1
Rxh2 21. c5 Nb2 22. Rd7 f6 23. Kg8
g6 24. Rh4 h5 25. Rxg7 Ne4
26. Ra5 Rb7 27. Rb7 Nxb7
31. Ng5+ Kg7 32. Nf3 Ne7
33. Nxe5 Nxe5 34. Rb4 Kg8 35. Be5
Ne7 36. e3 Kf7 37. Rf8+ Kg8
38. Kg2 Rc8 39. Kf3 Re8 40. Ra6
Rf8 41. Kf4 Ke7 42. Kg5 Rg8
43. Re6+ Ke8 44. Bd6 Ne8 45. Rxe8??
Rxg6+ 46. Kxg6 Ndx6 47. exd6 a5
48. g4 hxg4 49. Kh5 a4 50. e4 a3
51. Kxa4 a2 52. e5 a1 = Q
53. f4 Qh+ 54. Kf3 Qxh2 55. e6
Qc2+ (0–1).
ACM'S FIFTEENTH NORTH AMERICAN COMPUTER CHESS CHAMPIONSHIP (N ACC )
San Francisco, California, October 7-9, 1984
RESULTS and GAMES (Ken Thompson)

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Round 1

Crav blitz — fidelity x 1 e4 c5 2 d4 cxd4 3
gxd4 e5 4 g4 c5 5 g5 e6 6 b4 b6 7 a3
g4 8 gxe5 c5 9 gxf5 cxb4 10 cxb4
g8 11 g7 g8 12 b5 13 b6 14 c3
O-O c5 15 d5 d6 16 a4
Qa6 17 a5 Qb5 18 Qg4 Qd8 19 Qf6
e8 20 dxe4 Qc1 21 d4 b4 22 e5
e8 23 bxc5 bxc5 24 e5 Qc6 25 d6+t
Qb8 26 Qb5# 1-0

Phoenics — belle
1 d4 d5 2 Qg5 f6 3 f4
c6 4 c3 g5 5 Qg3 g4 6 Qh4 h5 7 Qa3
e5 8 h4 Qg5 9 c3 exd4 10 cxd4 Qge7 11 f3
Qxe4 12 e4 fxe4 13 d4 Qg6 14 d3
gf4 15 Qg3 Qd6 16 Qd3 Qc5 17 Qc3
g8 18 O-O O-O-O 19 Qg6 Qd7 20 Qh4
e8 21 g5 Qxh3 22 Qd3 Qxg2 23 Qxg2
e8 24 Qg5 Qd7 25 Qxd7 Qd7 26 e4 Qg8 27
Qh3 dxe4 28 fxe4 Qg6 29 Qf4 Qg4 30 Qd3
Qg7 31 Qe3 Qf5 32 Qg5 Qd4 33 Qd8
34 Qb1 Qd6 35 Qc1 Qb5 36 Qe4 Qxe4
37 Qd4 Qg5 38 Qc7 Qa2 39 Qa3 Qe4 40
Qe6 Qg8 41 Qh8 Qh8 42 Qe5 Qh4 43
Qd7+ Qa8 44 Qf6 Qf4 45 e5 Qd8 46 Be3
13 47 Qd3 Qh8 48 Qc3 Qc6 49 b3 Qb5 50
d5 Qxe5 51 Bc7+ Bb8 52 Bxa6 bxa6 53
Bc6 h3 54 Be6 h2 55 Bb1 Qg5 56 c6
Bf3 57 Qb2 Bg3 58 Bc2 Bb3 59 Bc1
Ba3 60 Bxh2 Bh2 61 Bxh2 Bxh2 1/2
Round 2

chaos — cray blitz 1 d4 d5 2 c4 e6 3 d5
Qf6 4 Qg5 Qbd7 5 e3 Qb4 6 cxd5 exd5 7 Qd3 c5 Qge2 c4 9 Qc2 h6 10 Qh4 Qb6 11
O-O O-O 12 h3 Qe8 13 Qa4 Qc3 14 h5
Qg4 15 Qg2 Qe6 16 Qc4 Qd6 17 Qc3
Qc6 18 Qe1 a6 19 Qd2 b5 20 Qc2 Qf6 21 Qab1 Qd7 22 Qb4 a5 23 Qb2 b4 24 Qh1 Qc8 25
Qc3 Qbd6 26 Qc3 Qae6 27 Qb1 a4 28 Qh4 Qc7 29 Qb6 Qa8 30 Qb4 Qc8 31 Qc3
Qh7 32 Qg3 33 Qg2 Qc6 34 Qd6 Qd7 35 Qe6b4 Qe6 36 Qf4 Qhf8 37 Qf5 We8 38 Qh4
Qd6 Qe6 39 Qg1 f5 40 Qxe6 Qxe6 41 Qf4
g5 42 Qg3 Qce8 43 Qd2 Qh6 44 Qg3 Qh8 45
Qf5 Qh5 46 Qg4 Qg7 47 Qe4 Qf5 48 Qf5 Qd6 49 Qg3 Qd7 50 Qb8 Qa4 51 exd5
Qxd5 52 Qb6 Qb8 53 Qc3 Qf8 54 Qd6 e2 55 Qb8 Qe8 56 Qb6 Qg8 57 Qc2 Qd6 58 Qb7 Qh2
Qe8 59 Qg2 Qf5 60 Qb5 Qe6 61 Qg1 Qd3 62 Qd1 Qf3 63 Qg2 Qf7 64 Qb4 Qd3 65 Qd6 Qb5 66 Qc5 Qa2 0-1

ostrich — chaos 1 e4 c5 2 c3 Qf6 3 e5 Qd5
Qc4 Qb6 5 Qc3 Qc6 6 O-O
dxe5 8 Qxe5 f5 9 Qd4 Qg6 10 Qc3 Qc7 11 d3
e6 12 Qc3 Qa5 13 Qd2 Qb6 14 a3 b5
15 Qc4 Qxc4 16 bxc4 Qe7 17 Qh6 Qh7 18
d2 Qg5 19 Qh5 Qg8 20 Qh7 21 Qh6
Qa6 22 Qb3 Qd8 23 Qc4 Qd7 24 Qh5
Qa8 25 h3 Qa4 26 Qc1 Qe8 27 Qf3 Qc6 28
Qg4 f5 29 Qe2 Qg6 30 Qd5 Qe5 31 Qb3
Qe3 32 Qx3 33 Qc3 Qx5 34 Qd2
Qd3 35 Qd8 Qf7 36 Qd7 Qe8 37 Qc8 Qc7
Qf8 38 Qf7 39 Qc7 Qc8 40 Qd7 Qc8
Qc6 41 Qh7 Qd7 42 Qe7 Qc6 43 Qf1
Qe3 44 Qd2 Qh4 45 Qd2 Qd2 46 Qd2
Qc4 47 Qd7 b5 48 Qd6 a5 49 Qb4 Qb4

merlin — intelligent software x 1 e4 e5 2
c3 d5 3 exd5 4 d4 e6 5 Qc3 Qc6 6 Qd4
Qxe5 7 Qxf6 7 Qxf6 Qxf6 8 Qxf6 Qxf6 9 Qxf6
10 Qe1 Qe6 11 Qb4 Qb6 12 Qg5 Qe7 13
Qd2 h6 14 Qge4 Qf6 15 b5 Qd8 16 Qd6
Qf6 17 Qf5 Qe8 18 Qd6 Qe4 19 Qe3 Qe2
20 Qxe3 Qxe3 21 Qe3 Qe3 22 Qh1
Qd2 23 Qd2 Qd2 24 Qe1 Qe7 25 Qd4
Qc5 26 Qad1 Qe6 27 Qd5 a5 28 Qd3 Qc8
Qf8 29 Qh1 Qf8 30 Qd4 Qg5 31 Qh3 Qd7
Qc4 32 Qd6 Qf3 33 Qb3 Qe8 34 Qb3
Qd5 35 Qc3 Qf3
Qd1 36 Qd1 Qa5 37 b6 Qa6 38 Qc7 Qe6
Qd8 Qh7 40 Qd5 Qel1 41 Qf2 Qe7 42
Qf3 Qe6 43 Qg4 Qf7 44 Qe7 Qd7 45
Qa6 Qa6 46 Qe8 Qc5 47 Qa3 Qc7 48
Qf5 Qb7 49 Qb5 50 Qb3 Qf6 51 a3 g5 52
Qe3 Qxe3 53 Qe3 Qe5 54 h4 adjudicated
0-1

belle — nuchess 1 e4 c5 2 c3 Qf6 3 d4 Qd6
Qc4 Qb6 5 Qc3 Qb6 6 Qc3 Qf6 7 Qc2 Qc6
Qf3 b6 9 O-O Qf6 10 Qe1 Qb4 11 Qc3
QO-0 12 Qc3 Qe7 13 Qf5 Qd6 14 b4 Qc4
Qe5 b5 16 Qc6 Qc6 17 Qe5 Qf5 18 Qx6
d6 19 Qd3 Qe7 20 Qc1 Qc4 21 Qe1
Qx6 Qc6 22 Qxe6 Qd4 23 Qe2 Qd2 24 Qd2
Qd4 25 Qc7 Qb6 26 Qb6 Qc6 27 Qc7
Qb7 28 Qb7 Qb7 29 Qa6 Qb6 30 Qa6
Qb6 31 Qa6 Qf8 32 Qf8 Qf8 33 Qf8
Qh4 34 Qf4 Qh4 35 Qa4 Qa4 36 Qd4
Qd4 37 Qc4 Qc4 38 Qb3 Qb3 39 Qa2 Qa2
Qc4 Qc4 Qd4 Qd4 Qe4 Qe4 Qf4 Qf4
Qg4 Qg4 Qh4 Qh4 Qi4 Qi4 Qj4 Qj4
Qk4 Qk4 Ql4 Ql4 Qm4 Qm4 Qn4 Qn4
Qo4 Qo4 Qp4 Qp4 Qq4 Qq4 Qr4 Qr4
Qs4 Qs4 Qt4 Qt4 Qu4 Qu4 Qv4 Qv4
Qw4 Qw4 Qx4 Qx4 Qy4 Qy4 Qz4 Qz4

novag x — awit 1 e4 c5 2 Qc3 d5 3 Qe4
Qc6 4 Qd5 Qbd7 5 e3 Qb4 6 cxd5 exd5 7
Qd3 Qe3 8 Qge2 c4 9 Qc2 h6 10 Qh4 Qb6 11
1985 TOURNAMENT RULES

1. Participants are required to attend a meeting at 12 noon on Sunday, October 13, for the purpose of officially registering for the tournament. Rules will be finalized at the meeting. The Tournament Director has the right to choose an alternate to replace any entry which fails to appear.

2. Each entry is a computing system. A listing of all programs running on that system should be available on demand to the Tournament Director. Any computing system can be used. Permission to change from one system to another may be granted by the Tournament Director.

3. The tournament is a four round Swiss style tournament. The first and second rounds will be played Sunday, October 13th, at 1 PM and 7:30 PM. The third round is scheduled for Monday, October 14th, at 7:30 PM, and the fourth round on Tuesday, October 15th at 7:30 PM.

4. Trophies will be awarded to the first three finishers. The order of finish will be determined by the total number of points earned. If two teams have an equal number of points, the sum of the opponents' points will be used as a second factor. If a tie still remains, the opponents' opponents' points will be used as a third factor.

5. Unless otherwise specified, rules of play are identical to those of regular "human" tournament play. If a point is in question, the Tournament Director has the authority to make the final decision. Games are played at a speed of 40 moves per player in the first two hours and then 20 moves every hour thereafter. The Tournament Director has the right to adjudicate a game after five hours of total clock time. The adjudication will be made on the premise that perfect chess will be played by both sides from the final position.

6. A team may request the Tournament Director to stop its clock at most twice during the course of a game because of technical problems. The clock must be restarted each time after at most 15 minutes. If a team can clearly establish that its problems are not in its own computing system but in the telephone network or in the communication facilities provided by the Tournament Committee, the Tournament Director can permit additional time-outs.

7. There is no manual adjustment of program parameters during the course of a game. In the case of failures, the program parameters must be reset to their original settings if it is at all possible. Information regarding castling status, en passant status, etc., may be typed in after a failure. If at any time during the course of a game a computer asks for the time remaining on either its or its opponent's clock, this information may be provided. The computer must initiate the request for information.
8. Each game is officially played on a chess board provided by the Tournament Committee. An electronic chess board used by one side can be substituted if the other side is agreeable. The official clock is provided by the Tournament Committee. If both sides agree, another clock can be used.

9. At the end of each game, each team is required to turn in a game listing to the Tournament Director.
COMPUTER CHESS LITERATURE

Books:


Magazines:

In recent years, articles on computer chess have appeared in many magazines and technical journals including Abacus, Sports Illustrated, Scientific American, Science Magazine, Nature, The Mathematical Intelligence, Chess Life, ACM’s SIGART Newsletter, The Journal of Artificial Intelligence, Graduate Engineer, Discoverer, and many others.
THE ACM COMPUTER CHESS COMMITTEE

In 1979, the ACM established the Computer Chess Committee as a standing committee on the Management Board responsible for organizing computer chess events within the ACM. In 1984, the Committee was transferred to the Management Board. The Committee's main responsibility is organizing the annual ACM North American Computer Chess Championship. This event has been held annually since 1970. Currently, the Committee Members are Monty Newborn (Chairman), Ken Thompson, Tony Marsland, Kathe Spracklen, and Hans Berliner. Ben Mittman, former President of the ICCA and "Manager" of the Northwestern University chess program, CHESS 4.9 (and other versions) was a member of the Committee until several months ago when he resigned and was replaced by Hans Berliner.

THE INTERNATIONAL COMPUTER CHESS ASSOCIATION

Established at the Second World Championship in Toronto in 1977, this international organization has about seven hundred members. It was formed by the programmers and is an organization primarily intended to serve them. The ICCA Journal publishes technical and non-technical articles on computer chess and is the foremost publication of its kind. Authors of articles should send them to Jaap van den Herik, Delft University of Tech., Dept. of Math and Informatics, 2628 BL Delft, Neth. The Journal publishes four times a year. Individuals interested in becoming members should write to William Blanchard, 360/253 Blackthorn Lane, Warrenville, Illinois 60555, USA. Dues are $10 plus a $5 surcharge annually. Officers are Monty Newborn, President, Johann Enroth, Vice President, and William Blanchard, Secretary/Treasurer.
1985 Computer Chess Turing Test

Can one tell, just by examining the quality of the chess game, whether a chess player is computer or human? That is the question we will ask during the Monday, October 14 Computer Chess Turing Test. This will be a 'hidden room' test, where the information coming from the hidden room will be used to detect the identity, computer or human, of a chess player. Some efforts will be made to hide computer and human traits which we don't want examined, such as timing of the moves and the rapid typewriter response of the computer. 1985 is our first year at such a test. We are not conducting a rigorous scientific experiment, but it could be used to lay a foundation for one.

We will run eight tests in parallel. Alex Fishbein will play eight opponents, all rated below master level. Moves will be transmitted back and forth using computer terminals.

There will be efforts to hide some properties of the chess playing computers. All chess moves made in the hidden room will be passed to a computer terminal operator, who will in turn send the move to the master in a standardized chess notation (White's opening move N-KB3 would be transmitted as "G1 F3".) Special efforts will be made to assure accuracy of chess moves.

We hope to use only the qualities of the chess moves to differentiate between computer and human opponents. The hidden room players will be instructed to play their normal chess style, and not attempt to 'emulate' how a computer might perform.

There will be audience participation. A prize will be awarded to the first audience member who correctly identifies all eight hidden-room opponents within a limited number of guesses. The following is the test entry form.

Turing Test Selection Form

Name ............................................................... phone .................
BOARD OPPONENT (circle one) BOARD OPPONENT (circle one)
Board 1 computer human Board 5 computer human
Board 2 computer human Board 6 computer human
Board 3 computer human Board 7 computer human
Board 4 computer human Board 8 computer human