# REPORT ON THE $1^{\text {st }}$ SOVIET COMPUTER-CHESS CHAMPIONSHIP OR RE-AWAKENING A SLEEPING GIANT 

M.V.Donskoy<br>Institute for System Studies<br>Moscow, USSR<br>Jonathan Schaeffer<br>ICCA Foreign Correspondent<br>Department of Computing Science<br>University of Alberta<br>Edmonton, Canada

## 1. INTRODUCTION

The $1^{\text {st }}$ Soviet Computer-Chess Championship was held in Ulan-Ude, June 27-29, 1988. Not only was a successful tournament held but, more importantly, the Soviet Computer-Chess Federation was formed.

Computer chess in the Soviet Union has had a proud tradition, although in the past decade there has been little activity. In 1967, the famous USSR-USA computer-chess challenge matched Moscow's ITEP program against its counterpart from Stanford University. The result was a decisive 3-1 victory for the Soviet entrant.

Computer chess came to the tore in the Soviet Union with the pioneering work of the Kaissa team, principally G.M. Adelson-Velsky, V. Arlazarov, and M. Donskoy. This group, as well as the Northwestem University group (authors of the Chess x.x programs), pioneered many of the computer-chess algorithms and terms that we use today (for example, such as null moves, bit-board move generation, iterative deepening, brute-force searching, the method of analogies, etc.). The $K_{\text {a }}$ aissa effort culminated in the program winning the $1^{\text {St }}$ World Computer-Chess Championship in Stockholm, 1974.

In the mid-70s, the Kaissa group moved on to other projects, creating a vacuum of computer-chess activity in the Soviet Union.

## 2. COMPUTER-CHESS INTEREST

Other than isolated attempts, such as Butenko's program in Siberia, not much was heard from the USSR but for one notable exception. For many years, former human chess World Champion Mikhail Botvinnik's efforts to create a chess program received a great deal of publicity. However, nothing was seen of the program other than some analysis it did on a few isolated positions. Botvinnik does indeed have a program (as discussed in the March 1988 issue of the ICCA Journal) but it may be a long time before it is seen in the West.

With the intense interest in chess of the Soviet people and the early success of computer chess, it is perhaps surprising that from the mid-70s to 1988 there was little computer-chess activity in the Soviet Union. There is no good explanation, but lack of financial support and machine time appear to be the most plausible reasons.

## 3. THE ULAN-UDE COMPUTER FESTIVAL

With this background, the organizing committee of the Ulan-Ude Computer Festival Informatics, Peace, Communication and Ecology decided to hold a computer-chess event as part of their festival.

Ulan-Ude (pronounced oo-Lan oo-da) is a city of 350,000 people and is the capital of the Buriat Republic. The city lies 100 kilometers north of Mongolia. Close by the famous Lake Baikal, containing $20 \%$ of the world's fresh water. Its scenic beauty makes it a favourite vacation area.

The tournament was directed by A.R. Bitman, an International Master and a member of the Kaissa team, with assistance from M.V. Donskoy (of Kaissa fame) and Jonathan Schaeffer (ICCA observer). The tournament attracted 6 programs although, regrettably, there were 4 notable absentees. Not present were Kaissa (retired), Botvinnik's program Pioneer (too many bugs?), Butenko's program (he required a main-frame that was impossible to arrange), and V. Petrenko's program Electronics-01 (travel problems).

|  | 1 | 2 | 3 | 4 | 5 | 6 |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Centaur | x | $=$ | 1 | 1 | $=$ | 1 | 4 | 1st |
| Strategist-1 | $=$ | x | $=$ | 1 | 1 | $=$ | 3.5 | 2nd |
| Algir | 0 | $=$ | x | $=$ | 1 | 1 | 3 | 3rd |
| Strategist-A | 0 | 0 | $=$ | x | $=$ | 1 | 2 | 4th |
| Strategist | $=$ | 0 | 0 | $=$ | x | $=$ | 1.5 | 5th |
| Intellect | 0 | $=$ | 0 | 0 | $=$ | x | 1 | 6th |

The round-robin tournament was won by the Centaur program, authored by dr. Victor Vikhrev of Moscow. The program clearly played the best chess and might have won by a larger margin had it been able to win two games when up material.

Three of the entrants were variants on the Strategist program. This program will be commercially available in the Soviet Union shortly at the price of 380 rubles, roughly $\$ 600$ (US). The differences in the program were not significant to avoid a repeated game in the tournament. Centaur, playing White, had identical games against Strategist and Strategist-1. Neither program would vary and both ended in draws.

In general, the quality of play was quite weak, perhaps 1200 or 1300 strength. Every game featured simple blunders of material and poor positional play. On the other hand, all the entrants were amateurs using slow computing facilites with limited memory. Without doubt, next year's event will see a marked improvement in play.

The tournament had a few disputes that showed the inexperience of the participants. One program made an en passant move 5 moves after it was legal. Another program announced the game was over, even though the opponent made his move and waited to be mated. None of the programs had triple repetition code; several games ended in draws even when up considerable material. Finally, there were problems with the time control.

There was no common time setting that all the programs could be set to. Fortunately, all problems were settled amicably. Regrettably, the Electronics-01 program was unable to reach Ulan-Ude in time for the tournament. They arrived after the last round. Exhibition games were arranged against the top three finishers the following days. Petrenko's program scored 2.5 out of 3 against them (drawing with Centaur) while only using a 1-ply search! The consensus was that had it competed in the tournament, it would probably have won.

## 4. A NEW COMPUTER-CHESS ORGANIZATION

After the tournament, the organizers, directors, participants, and other interested parties held a meeting to form the Soviet Computer-Chess Federation. The meeting established the following goals for the organizition:

1) to help get people involved in computer chess;
2) to help the dissemination of information on computer chess;
3) to promote the use of computers in private houses;
4) to provide chess-players with computer chess results, such as databases;
5) to act as a Liaison with the ICCA.

The means for achieving these aims were detailed as:

1) to publish a department in a computer-science journal;
2) to organize computer-chess tournaments and conferences;
3) to find a sponsor for computer chess;
4) to establish a cooperative for producing chess computers;
5) to give courses on computer chess in Universities.

Several of the means and goals may appear to be rather unusual to ICCA members, but it is important to understand the politics of computer chess in the Soviet Union. First, computers are not in abundant supply. It is hoped that through chess-playing computers, the government can be made more aware of the need for personal computers. Second, although one may regard computer chess as a scientific endeavour, the fact is that the USSR Academy of Sciences is not as wealthy as other departments and therefore unlikely to be of financial assistance. More likely sponsors are the Sports Committees (and their interest in human chess) and Industrial Co-operatives (and their interests in making money). Accordingly, it is not surprising to see the affiliations of the first Soviet Computer Chess Executive:

Chairman Dr. A. Timoteev (Institute for Physical Culture, Sport)
Member Dr. A.S. Morozov (NICEVENT, Industry)
Member Dr. M.V. Donskoy (Institute for System Studies, Science)
In summary, the $1^{\text {st }}$ Soviet Computer-Chess Championship was a success. There will be another tournament next year and there is no doubt it will be bigger and stronger. Has a sleeping giant been re-wakened?

## 5. THE LIST OF PARTICIPANTS

| 1. Centaur | Dr. Victor Vikhrev, Moscow <br> IBM-PC, Pascal, 200KB, no opening book, 4 pos/sec, selective search, rough- <br> ly 300 games played. |
| :--- | :--- |
| 2. Strategist-1 | E. Surmin, S. Kurbatov, Moscow <br> A. Morozov, Moscow |
| Special hardware running at 1.8 MHz, assembler, 20KB, 1K opening book, <br> $50-100$ pos/sec, alpha-beta, roughly 100 games played. |  |
| 3. Algir | Alexander Pokrovski, Moscow <br> IBM-PC, assembler, 32 KB, no opening book, 10-100 pos/sec, alpha-beta, <br> roughly 20 games played. |


| 4. Strategist-A | E. Surmin, S. Kurbatov, Moscow <br> A. Morozov, Moscow Special hardware running at 1.8 MHz , assembler, $18 \mathrm{~KB}, 1 \mathrm{~K}$ opening book, $40-80 \mathrm{pos} / \mathrm{sec}$, alpha-beta, roughly 40 games played. |
| :---: | :---: |
| 5. Strategist | E. Surmin, S. Kurbatov, Moscow <br> Y. Konopackey, Minsk Special hardware running at 1.8 MHz , assembler, $16 \mathrm{~KB}, 1 \mathrm{~K}$ opening book, $70-200 \mathrm{pos} / \mathrm{sec}$, alpha-beta, roughly 80 games played. |
| 6. Intellect | Y. Kubinov, Leningrad special processor running at 2 MHz , assembler, 100 moves opening book, 20 pos/sec, alpha-beta, unknown number of games played. |
| 7. Electronics-01 | V. Petrenko, Leningrad <br> Special hardware, DEC assembler, 8 K rom, 1 K ram, 200 moves opening book, $25 \mathrm{pos} / \mathrm{sec}$, alpha-beta, roughly 200 games played. |

## 6. THE GAMES

## ROUND 1

## Strategist-Strategist-1

1. f4 d5 2. Nf3 Nf6 3. e3 Bg4 4. d4 e6 5. h3 Bf5 6. g4 Bg6 7. Nc3 Bb4 8. a3 Ba5 9. b4 Bb6 10. Ne5 0-0 11. Bb5 a6 12. Be2 Nc6 13. Nxg6 fxg6 14. 0-0 a5 15. b5 Ne7 16. Bb2 c5 17. g5 Nd7 18. Rf3 cxd4 19. Na4 dxe3 20. Nxb6 Nxb6 21. Rxe3 e5 22. f5 e4 23. Bd4 Nxf5 24. Bxb6 Qxb6 25. Qxd5+ Kh8 26. Kh1 Nxe3 27. Qxe4 Nf5 28. Qd3 Qf2 29. Rf1 Ng3+ 30. Qxg3 Qxg3 31. Rxf8+ Rxf8 32. Bd3 Rf2 33. Be4 Rh2++ 0 1.

## Strategist-A-Centaur

1. b4 e5 2. Bb2 Bxb4 3. Bxe5 f6 4. c3 d6 5. Bxf6 Nxf6 6. cxb4 a5 7. bxa5 Rxa5 8. d4 Be6 9. Nc3 Qd7 10. e4 0-0 11. Nf3 Qc6 12. Qd3 Qb6 13. 0-0-0 Ng4 14. Nd5 Bxd5 15. Rd2 Be6 16. h3 Nh6 17. Rb2 Qc6+ 18. Rc2 Qb6 19. d5 Bd7 20. Be2 Ba4 21. Rb2 Qc5+ 22. Kb1 b6 23. Rc1 Qxf2 24. Bf1 Qg3 25. Rxc7 Nd7 26. Qc3 Rc5 Time, 0-1.

## Algir-Intellect

1. Nf3 Nf6 2. Nc3 d5 3. e3 e6 4. Bd3 Nc6 5. 0-0 Bc5 6. Bb5 0-0 7. Na4 a6 8. Bxc6 Bb4 9. Bxb7 Bxb'7 10. c3 Ba5 11. b4 Bb6 12. Nxb6 cxb6 13. d4 Ne4 14. Qd3 f5 15. Nd2 g5 16. g3 h5 17. Rd1 f4 18. gxf4 gxf4 19. exf4 Rxf4 20. Nxe4 Rxe4 21. f4 h4 22. a4 a5 23. b5 Qf6 24. Kh1 Qg6 25. Rg1 Qxg1+ 26. Kxg1 Re1+ 27. Kf2 Re4 28. Qf3 Kf8 29. Ba3+ Kf7 30. Qh5+ Kf6 31. Qxh4+ Kg6 32. Rg1+ Kf5 33. Qg5++ 1 - 0.

## ROUND 2

## Strategist-1-Strategist-A

1. d4 f5 2. e4 fxe4 3. Qh5+ g6 4. Qe5 Nf6 5. Nd2 d5 6. f3 Nc6 7. Qg5 Nxd4 8. Kd1 e6 9. Qf4 Bd6 10. Qe3 e5 11. c3 Nc6 12. fxe4 Nxe4 13. Nxe4 dxe4 14. Qxe4 Bc5+ 15. Bd2 Bf5 16. Qe2 Qc8 17. Nf3 Bd6 18. a4 0-0 19. b4 Re8 20. b5 Nb8 21. Qf2 Qd8 22. Bc4+ Be6 23. Qe2 Bxc4 24. Qxc4+ Kh8 25. Qd5 e4 26. Qxb7 Nd7 27. Bg5 Qc8 28. Qc6 exf3 29. Ra2 f2 30. Bh4 f1=Q+ 31. Rxf1 Bxh2 32. g4 Be5 33. Rg1 Rg8 34. Rd2 Nf8 35. Rd8 Qxd8+ 36. Bxd8 Rxd8+ 37. Ke1 Rc8 38. Qb7 Bxc3+ 39. Kf1 Ne6 40. Qc6 Bd4 41. Qxe6 Rcf8+ 42. Kg2 Bxg1 43. Qe5+ Rg7 44. Kxg1 Rfg8 45. Qd4 Ra8 46. g5 a5 47. bxa6 e.p. Rxa6 48. Qe4 Rb6 49. a5 Rb5 50. Qe8+ Rg8 51. Qxb5 Rf8 52. Qe5+ Kg8 53. a6 c6 54. Qe6+ Kh8 55. a7 c5 56. Qe5+ Kg8 57. Qd5+ Kg7 58. a8=Q Rxa8 59. Qb7+ Kh8 60. Qxa8+ Kg7 61. Qd5 h5 1-0.

## Intellect-Centaur

1. e4 d5 2. Nc3 dxe4 3. Bb5+ c6 4. Bc4 b5 5. Be2 Bf5 6. g4 Bg6 7. d4 e6 8. a4 Qa5 9. Bf4 b4 10. Nb1 Nd7 11. Nd2 Be7 12. Nc4 Qd5 13. Ne5 Nxe5 14. Bxe5 e3 15. Bxg7 Qxh1 16. Kf1 exf2 17. Kxf2 Qxh2+ 18. Kf3 Bh4 19. Ke3 Qf2+ 20. Kd2 Qf4++ 0-1.

## Algir - Strategist

1. Nf3 Nf6 2. Nc3 d5 3. e3 e5 4. Nxe5 Bb4 5. Bd3 Bxc3 6. dxc3 0-0 7. 0-0 Ne8 8. Bd2 c5 9. Bb5 a6 10. Bd3 Qe7 11. f4 f6 12. Nf3 c4 13. Be2 Nc6 14. Ne1 Bf5 15. g4 Be4 16. b3 cxb3 17. cxb3 a5 18. Bb5 h6 19. c4 Nd6 20. Bxc6 bxc6 21. cxd5 cxd5 22. h4 f5 Time, 1-0.

## ROUND 3

## Strategist - Intellect

1. f4 d5 2. Nf3 e6 3. d4 Nc6 4. Nc3 Nf6 5. e3 Be7 6. Be2 0-0 7. 0-0 Bd7 8. Ne5 Nxe5 9. fxe5 Ne4 10. Nxe4 dxe4 11. Bd2 f6 12. Rf4 Bc6 13. Bc4 Bd5 14. Bxd5 exd5 15. a4 g5 16. Rf2 c5 17. g4 a5 18. exf6 Bxf6 19. dxc5 Bxb2 20. Rb1 Rxf2 21. Kxf2 Qf6+ 22. Kg1 b6 23. cxb6 Be5 24. b7 Rf8 25. Qe1 Qf3 26. Bxa5 Qxg4+ 27. Kh1 Qf3+ 28. Kg1 h5 29. Rb5 Qf7 30. c4 Rb8 31. Rxd5 Bf6 32. h4 gxh4 33. Qd1 Rxb7 34. Kg2 Qg6+ 35. Kh2 Qg3+ 36. Kh1 Qh3+ 37. Kg1 Qg3+ 38. Kh1 Qh3+1/2-1/2.

## Strategist-A - Algir

1. c4 Nf6 2. d4 Na6 3. Nf3 e6 4. Nc3 Bb4 5. Bf4 0-0 6. a3 Bxc3+ 7. bxc3 d5 8. cxd5 Nxd5 9. Bd2 Nf6 10. e3 Ne4 11. Bd3 f5 12. 0-0 Nb8 13. Be1 Nf6 14. h4 g6 15. Ne5 a5 16. f4 Ra7 17. g4 Nxg4 18. Nxg4 fxg4 19. Qxg4 c5 20. Bc4 Kh8 21. Bxe6 Bxe6 22. Qxe6 Qe8 23. Qxe8 Rxe8 24. Rf3 b6 25. a4 Re4 26. dxc5 bxc5 27. Rb1 Nd7 28. Ra1 Nb6 29. Rd1 Ra8 30. f5 Rg4+ 31. Kh1 gxf5 32. Rxf5 Rc4 33. e4 Rxe4 34. Rxc5 Nxa4 35. Rb5 Rg4 36. R1d5 Re8 37. Bd2 Rxh4+ 38. Kg2 Rg8+ 39. Kf2 Rh2+ 40. Kf1 Rh1+41. Kf2 Rh2+ 42. Kf1 Rh1+43. Kf2 Rh2+1/2-1/2.

## Centaur - Strategist-1

1. e3 Nf6 2. Nc3 d5 3. d4 e6 4. h4 Nc6 5. Bb5 a6 6. Bxc6 bxc6 7. Bd2 Rb8 8. Na4 Ne4 9. Qh5 Qf6 10. Nf3 g6 11. Qe5 Qxe5 12. Nxe5 Bb7 13. f4 f6 14. Nd3 Nxd2 15. Kxd2 Bg7 16. Nac5 Bc8 17. Rae1 0-0 18. Reg1 h5 19. c3 a5 20. Rf1 f5 21. Rfg1 Bf6 22. Rb1 Rb6 23. Nb3 Kg7 24. Nxa5 Ra6 25. b4 Rd8 26. a4 Rb6 27. Nb3 Rb8 28. Nbc5 Ra8 29. a5 Rb8 30. Ne5 Rd6 31. a6 Ra8 32. Ra1 Ra7 33. c4 Be7 34. Kc3 Bf6 35. g3 Be7 36. Rh2 Bf6 37. Rha2 Be7 38. Kb3 Bf6 39. Rc2 Be7 40. Kb2 Bf6 41. Rcc1 Be7 42. Rc3 Bf6 43. Rc2 Be7 44. Rcc1 1/2-1/2.

## ROUND 4

## Strategist - Strategist-A

1. f4 d5 2. Nf3 Nf6 3. e3 Bg4 4. Nc3 e6 5. h3 Bf5 6. Nh4 Nc6 7. Nxf5 exf5 8. Bd3 Ne4 9. 0-0 Bb4 10. Nb1 0-0 11. Bxe4 fxe4 12. d4 a5 13. Nc3 f5 14. Qe1 g5 15. fxg5 Qxg5 16. Bd2 Qd8 17. Qg3+ Kh8 18. Nxe4 fxe4 19. Bxb4 Nxb4 20. Rxf8+ Qxf8 21. Qxc7 Qg7 22. Qc5 b6 23. Qc3 Rb8 24. a3 Na6 25. b4 Qc7 26. Qxc7 Nxc7 27. Rf1 h5 28. g4 h4 29. Rf4 a4 30. g5 Nb5 31. c4 dxc4 32. Rxh4+ Kg8 33. Rf4 Re8 34. Rf6 Rb8 35. Rf4 Re8 36. Rf6 Rb8 37. Rf4 Re8 1/2-1/2.

## Intellect - Strategist-1

1. Nf3 Nf6 2. d4 d5 3. Nc3 e6 4. Bf4 Nc6 5. e3 Bd6 6. Bxd6 cxd6 7. Be2 0-0 8. 0-0 Bd7 9. a4 e5 10. dxe5 Nxe5 11. Nxd5 Nxf3+ 12. Bxf3 a5 13. Qd4 Rc8 14. c4 Qe8 15. Qxf6 gxf6 16. Nxf6+ Kg7 17. Nxe8+ Rfxe8 18. b3 Bc6 19. Rad1 Rcd8 20. Bxc6 bxc6 21. Rd4 Re5 22. e4 c5 23. f4 cxd4 24. fxe5 dxe5 25. g4 f6 26. h4 Rg8 27. Rf3 Kh6 28. Rxf6+ Rg6 29. g5+ Kh5 30. Rf5 Kxh4 31. Rxe5 Rxg5+ 32. Rxg5 Kxg5 33. c5 Kf4 34. b4 axb4 35. a5 Kxe4 36. a6 b3 37. a7 Kd5 38. a8=Q+ Kxc5 39. Qa7+ Kc4 40. Qf7+ Kb4 41. Qe7+ Kc4 42. Qf7+ Kb4 43. Qe7+ Kc4 44. Qf7+ Kb4 1/2-1/2.

## Algir - Centaur

1. Nf3 d5 2. e3 a6 3. Bd3 e5 4. c3 e4 5. Bxe4 dxe4 6. Qa4+ Nc6 7. Qxe4+ Be6 8. 0-0 Nf6 9. Qc2 Bd6 10. c4 Bg4 11. Nc3 Bxf3 12. gxf3 Rb8 13. Ne4 Nxe4 14. Qxe4+ Qe7 15. Qxe7+ Kxe7 16. d4 Kf6 17. c5 Be7 18. b3 Kg6 19. a4 Rbd8 20. f4 Na5 21. Rb1 Nc6 22. b4 Rd5 23. b5 axb5 24 axb5 Na5 25. b6 c6 26. Rb4 Rhd8 27. Kh1 Kh6 28. Rg1 g6 29. Ba3 Bf6 30. Ra4 Nb3 31. Rb4 Nd2 32. Rd1 Ne4 33. Rf1 Ra8 34. Bb2 Nd2 35. Ra1 Rxa1+ 36. Bxa1 Kg7 37. Bc3 Ne4 38. Be1 Nxc5 39. dxc5 Rd1 40. Kg2 Rxe1 41. Rc4 Rd1 42. e4 Rd4 43. Rc2 Rxe4 44. Kg3 Re1 45 Kg 2 Bd4 46. Rc4 Rd1 47. Rc2 Rd3 48. f3 Rc3 49. Rxc3 Bxc3 50. f5 gxf5 51. h4 Bd4 52. Kg3 Bxc5 53. Kf4 Kf6 54. Kg3 Bxb6 55. Kg2 Bd4 56. f4 b5 57. Kf3 c5 58. h5 c4 59. Ke2 b4 60. Kf3 b3 61. h6 Kg6 62. Kg3 c3 63. Kf3 c2 64. Kg3 c1=Q 65. Kf3 b2 66. Kg3 b1=Q 67. Kf3 Qd3 68. Kg2 0-1.

## ROUND 5

## Strategist-A - Intellect

1. f4 d5 2. Nf3 e6 3. d4 Nc6 4. Nc3 Nf6 5. e3 Be7 6. Bd2 0-0 7. Bb5 a6 8. Bd3 Nb4 9. Be2 Ne4 10. Nxe4 dxe4 11. Ne5 f6 12. Nc4 b5 13. a3 Nd5 14. Na5 Bd7 15. 0-0 g5 16. b4 gxf4 17. exf4 f5 18. c4 bxc4 19. Bxc4 Bf6 20. Nb3 Nb6 21. Be2 Nd5 22. g4 c6 23. g5 Be7 24. Nc5 Bc8 25. h4 h6 26. gxh6 Bf6 27. Be1 Ne3 28. Qb1 Qxd4 29. Nb3 Qd5 30. Rf2 Rd8 31. Ra2 Bxh4 32. Rb2 Bxf2+ 33. Bxf2 Ng4 34. Rd2 Nxf2 35. Rxd5 Nh3+ 36. Kh2 exd5 37. Kxh3 Kh7 38. Nd4 Bd7 39. Qc1 Rdc8 40. Qf1 Rg8 41. Bxa6 Kxh6 42. a4 Rb8 43. b5 c5 44. Nb3 c4 45. Nc5 Bc8 46. Bxc8 Rbxc8 47. Ne6 Ra8 48. Qa1 Rae8 49. Qf6+ Kh5 50. Qxf5+ Kh6 51. Qf6+ Kh5 52. Ng7+ Rxg7 53. Qxg7 Rd8 54. Qh7++ 1-0.

## Strategist-1-Algir

1. c4 Nf6 2. d4 Na6 3. Nf3 e6 4. Nbd2 Bb4 5. a3 Bxd2+6. Bxd2 0-0 7. e3 c5 8. b4 cxd4 9. Nxd4 e.5 10. Nf3 e4 11. Nd4 Nc7 12. Be2 g5 13. 0-0 d6 14. f4 g4 15. c5 dxc5 16. bxc5 Nce8 17. f5 h5 18. Rc1 Ng'7 19. Rf2 Bd7 20. h3 gxh3 21. gxh3 Kh7 22. Bb5 Bxb5 23. Nxb5 Qd7 24. Nd4 Rg8 25. Kh1 Qd5 26. c6 bxc6 27. Bb4 Qd7 28. Rxc6 Nd5 29. Bd2 Ne7 30. Rf6 Nd5 31. Ra6 Nc7 32. Rf6 Nce8 33. Ra6 Nc7 34. Rf6 Nce8 35. Ra6 Nc7 1/2-1/2.

## Centaur - Strategist

1. e3 Nf6 2. Nc3 d5 3. d4 e6 4. h4 Nc6 5. Bb5 a6 6. Bxc6 bxc6 7. Bd2 Rb8 8. Na4 Ne4 9. Qh5 Qf6 10. Nf3 g6 11. Qe5 Qxe5 12. Nxe5 Bb7 13. f4 f6 14. Nd3 Nxd2 15. Kxd2 Bg7 16. Nac5 Bc8 17. Rae1 0-0 18. Reg1 h5 19. c3 a5 20. Rf1 f5 21. Rfg1 Bf6 22. Rb1 Rb6 23. Nb3 Kg7 24. Nxa5 Ra6 25. b4 Rd8 26. a4 Rb6 27. Nb3 Rb8 28. Nbc5 Ra8 29. a5 Rb8 30. Ne5 Rd6 31. a6 Ra8 32. Ra1 Ra7 33. c4 Be7 34. Kc3 Bf6 35. g3 Be7 36. Rh2 Bf6 37. Rha2 Be7 38. Kb3 Bf6 39. Rc2 Be7 40. Kb2 Bf6 41. Rcc1 Be7 42. Rc3 Bf6 43. Rc2 Be7 44. Rcc1 1/2-1/2.
(cf. Centaur - Strategist-1, Round 3)

## Pernio ropes



