
To some, this consequence may seem undesirable. Yet, when a tournament would necessarily reveal a programmer to be affiliated to commerce, it might induce hypocrisy by persuading workers to observe secrecy about their affiliations. The present rule, besides avoiding the hypocrisy has the advantage of unequivocally assigning commercial or amateur status.

ANNOUNCEMENT

THE FIFTH WORLD COMPUTER-CHESS CHAMPIONSHIP

**ICCA Communication
by D.N.L. Levy**

The Fifth World Computer Chess Championship is now definitely known to be held in 1986 in Germany, at the invitation of the German Chess Federation. The ICCA has gratefully accepted the invitation; many details have already been settled by David Levy, the well-known international chess master. The venue is expected to coincide with the annual computer exhibition in Cologne, GFR, from June 13th to 17th, 1986, to within a day or two.

RATING SUPER CONSTELLATION

**D.E. Welsh
Chairman, US Chess Federation
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A top-priority goal of the USCF's Computer Chess Committee for several years has been establishing a USCF Computer Rating Agency to provide reliable ratings for chess microcomputers and personal-computer chess programs.

CREDIBILITY

Ever since chess microcomputers first appeared in 1978, advertising claims have often overstated the computers' playing strength. Many USCF members - along with millions of others - bought one or another of the early machines, and ultimately lost interest because the level of play just was not challenging enough.

Because the USCF rating system is the most widely recognized measure of chess skill, the performance of chess microcomputers tends to be described as a USCF rating. Sometimes real USCF ratings were obtained for the computers, by playing them in one or two tournaments. Too often, though, there has not been a solid basis for the claims made for the machines. Even when the manufacturer made a good-faith effort to get a real rating, the results were frequently misleading - provisional ratings based on a few games just are not very accurate. Also, the prototype units entered in tournaments have been known to play much more strongly than the eventual production models.

For these and other reasons, experienced chess-players - particularly those who have had the experience of owning a chess microcomputer - have become quite sceptical about the ratings claimed for these computers. This is not healthy nor is it favourable to manufacturers who by now have developed machines that really do play a strong game, and want to advertise them; also it is bad for the USCF, because the credibility of the rating system is being questioned; it is bad, too, for the chess-player who wants to buy a really good chess computer but who fails to find his way among the claims.

THE RATING AGENCY

In 1984 the USCF announced the establishment of its Computer Rating Agency, a service provided to the manufacturer for a fee that barely covers the costs of the process. The idea behind it is that, by playing many games against players of comparable strength under controlled tournament conditions, the USCF can develop a computer rating as accurate as the rating of a typical USCF member - to within about 25 points. As a part of the process, the USCF also tests the samples submitted for rating to develop a performance profile on a suite of test problems, retaining one of the units as a benchmark. Thus, the USCF ensures that production models will play at the same level as the machines rated.

The USCF officially certifies each rating developed by the Computer Rating Agency, and provides the manufacturer with a USCF seal to show that this rating is official. As chess-computer manufacturers begin to use the Computer Rating Agency to assess the playing strength of their products, this official USCF seal will appear in advertisements and on product packages. Chess-players all over the world can be confident that these ratings are accurate and that they are certified by the USCF when they see this seal displayed. Demand to see it before you buy a chess computer!

SUPER CONSTELLATION

The first machine submitted to the USCF for rating was the Super Constellation, manufactured by Novag Industries, Ltd. Their submittal was an essential step in establishing the Computer Rating Agency as the standard for chess-computer performance, and Novag has the gratitude of the USCF and its members for taking this first important move in providing consumers with computer ratings they can truly trust.

Although there is always some risk in being a pioneer, Novag could be confident that their machine would do well: they had consistently entered their prototypes in USCF tournaments, and ever since 1983, the Super Constellation prototype has played a large number of rated games. When the rating process began, Super Constellation had a tentative program rating of 2007. The only question - an important one to Novag - was whether the machine's known performance level would result in an official rating slightly above 2000, or one slightly below.

THE RATING PROCESS

Super Constellation's rating is based on a 40-game tournament against players rated between 1900 and 2100, held in Los Angeles during October 1984. The rating range for this event was determined by a series of test games

against players of various ratings, in which the machine performed at a 2001 level; 16 individual players competed against the machine, each playing one to four games. Here is how they did (humans first!):

Stephen Hall	2099	0.5 - 3.5	Gil Coronel	1960	1.5 - 2.5
William Torman	2089	0 - 3	Steven Pravdo	1958	1 - 0
Alex Baltutis	2028	2 - 0	Tim Catledge	1952	3 - 1
Robert Bryan	2016	2 - 0	Luis Villa	1951	1 - 2
Paul Shuey	1996	0.5 - 0.5	David Welsh	1931	1.5 - 2.5
Larry Neuton	1993	0 - 1	Eugene Motz	1913	0 - 1
Brandon Eade	1986	2 - 1	John Shoosmith	1907	0.5 - 2.5
Tim Thompson	1977	2 - 0	Arthur Kimes	1905	0.5 - 1.5

Super Constellation scored 22.0 (for 55%) against an average opponent rating of 1982, to become an official Expert with a rating of 2018. The machine's performance ratings for the initial estimation process and for the actual rating tournament agreed closely, and matched the tentative program's rating within 11 points - indicating that the Computer Rating Agency can generate ratings accurate within the 25 point tolerance the USCF expects for its members' ratings.

It is evident from the table above that some strong players were shocked when playing the machine. A player's performance against the computer tended to hinge on his style: those who preferred highly tactical games usually did less well. I was among the machine's opponents who failed to make an even score, though my result was what would be expected given my current rating (about 100 points below my level when I was playing actively).

SC IS SUPER-CUNNING

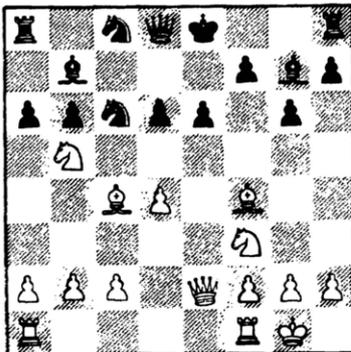
Super Constellation has a relatively "human" style and many of the games in the event were quite well-played, with relatively little of the weird non-sense that has too often characterized computer games. Probably the machine's best effort was this fine miniature:

White: Super Constellation

Black: Motz

Modern Defense ECO B06

1. e4 g6 2. d4 Bg7 3. Nc3 b6. An obscure sideline whose source in ECO is Steinitz-Blackburn, London 1862. 4. Nf3 e6. Weakening f6, which the machine immediately takes aim at. 5. e5 Bb7 6. Bc4 Ne7 7. O-O d5? This is premature, and turns out badly. 8. exd6 e.p. cxd6 9. Bf4: Super Constellation develops classically. 9. ... Nbc6 10. Nb5! Nc8 11. Qe2! Preventing the freeing move 11. ... d5 on which Black was counting. 11. ... a6? Black should have castled; his moves gives he machine a chance for a blitzkrieg. 12. d5! Na5 13. dxe6 Nxc4 14. exf7+ Kxf7. Or 14. ... Kf8 15. Nc7! Qe7 16. Qxc4. 15. Ng5+: "Doesn't this thing ever make a mistake?" Not in this game! 15. ... Qxg5: "Very sad, but if 15. ... Kg8 16. Qe6+ and mate follows." 16. Bxg5



Position after 11. ... a6?

axb5 17. Rael Be5 18. b3 Na3 19. Qd2 Ne7 20. f4 Bf6 21. Bxf6 Nf5. (If 21. ... Kxf6 22. Qxd6+ followed by mate.) 22. Bxh8 Rxh8 23. g4 Rg8 24. Qf2 (Super Constellation does not fall for the swindle 24. gxf5? gxf5+ 25. Kf2 Rg2+) 24. ... Nh6 25. Qxb6 Ba8 26. Qc7+ 1-0.

As you can see, this machine knows how to attack if it is given an opening! In my own encounters with Super Constellation, I was only able to get one draw from the first three games as the machine shocked me with unexpected moves on several occasions. The third was the best of the games we played:

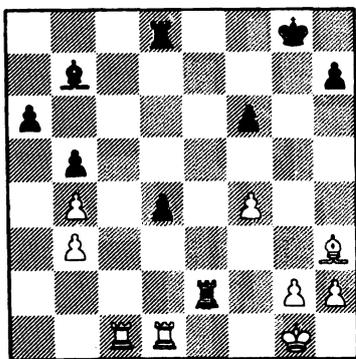
White: Welsh

Black: Super Constellation

Ruy Lopez ELO C83

1. e4 e5 2. Nf3 Nc6 3. Bb5 a6 4. Ba4 Nf6 5. O-O Nxe4. The Open Defense, a good choice for a computer since the machine gets active piece play. 6. d4 b5 7. Bb3 d5 8. dxe5 Be6 9. c3 Be7 10. Nbd2 O-O 11. Qe2. 11. Bc2 may be better, though there is really nothing wrong with this. I was hoping to get the machine into uncharted waters, but its book turned out to be deeper than mine! 11. ... Nc5 12. Bc2 d4! Active play. 13. Nxd4 Nxd4 14. cxd4 Qxd4. Here Super Constellation - whose "book" is about 1/5 of boldface ECO - has followed to the end a variation that ECO rates as slightly better for Black. 15. Nf3 Qc4! Now it is clear that the machine has the more active position, a dangerous situation to be in against a computer. 16. Re1 Qxe2 17. Rxe2 Bc4 18. Rd2 Rad8 19. b3 Bd5 20. Nd4 Ne6 21. Bb2 Nxd4 22. Bxd4. Here it looks as if White is close to equalizing, but the queenside-pawn majority remains a threat. 22. ... Bb4 23. Rdd1 c5 24. a3! Of course I wanted to cripple Black's majority. 24. ... cxd4 25. axb4 Bb7 26. Bf5?! The wisdom of this is questionable, but I was planning to grab the c-file. 26. ... Rfe8 27. f4 f6! Excellent and thematic: Super Constellation pries open the e-file and suddenly Black has a tangible initiative. 28. exf6 Re2! 29. Bh3 gxf6 30. Racl? This leads to the loss of the exchange as the d-Pawn is just too strong.

30. ... d3! Super Constellation shoves it down my throat! I didn't enjoy it. 31. Rc7 d2! 32. Kf1 Re8 33. Rxd2. There is no choice, but this leaves White with a lost game. 33. ... Bxg2+ 34. Bxg2 Rxd2 35. Bb7 Rd4 36. Bxa6 Rxf4+ 37. Kg2 Rg4+ 38. Kf3 Rxb4 39. Rc3 Kf7 40. Bb7 Re5 41. Rd3 f5 42. Bd5+ Kg6 43. h3 Kg5 44. Bg8 h5 45. Rd7 Re8 46. Bf7 Rc8 47. Rd3 Rc2 48. Kg3 h4+ 49. Kf3 Rh2 0-1.



Position after 30. Racl?

Angry at myself - and concerned about how it would look if I didn't make a more respectable score against the machine - I used everything I knew about computer weaknesses to win my last game:

White: Super Constellation

Black: Welsh

French Defense ECO C18

1. e4 e6 2. d4 d5 3. Nc3 Bb4 4. e5 c5 5. a3 Bxc3+ 6. bxc3 Ne7 7. a4 Qa5 8. Bd2 Qc7 9. Nf3 Nbc6 10. Be2 Nf5 11. g4 Nfe7 12. O-O c4 13. Bf4 Bd7 14. Bg3 O-O-O 15. a5 Nxa5 16. Bh4 Rde8 17. Bg3 b6 18. Qd2 Bc6 19. Rfb1 h6 20. Bf1 Reg8 21. Bg2 g5 22. Ra2 Ng6 23. Rab2 Qe7 24. Ra2 Nf8 25. Rab2 h5 26. gxh5 Rxh5 27. Ne1 g4 28. f4 gxf3 29. Nxf3 Ng6 30. Rf1 Be8 31. Ne1 Qg5 32. Qf2 Ne7 33. Nf3 Qh6 34. Nh4 Nf5 35. Nxf5 Rxf5 36. Bf4 Qg6 37. Qe2 Nc6 38. Kh1 Ne7 39. Qd2 Rh5 40. Ral Kb7 41. Rba2 a5 42. Rb2 Nf5 43. Rab1 b5 44. Rxb5+ Bxb5 45. Rxb5+ Ka6 46. Rb2 Nh4 47. Rbl Qxg2+ 48. Qxg2+ Rxg2 O-1

Even in defeat, Super Constellation found a way to frustrate me - I was expecting the machine would play the natural defensive move 47. Bg3, which allows a spectacular finish - 47. ... Qxg3!! But (as I verified by setting up the position later as a problem) Super Constellation "had seen the trap". Yes, this machine deserves its Expert rating!

LOGISTICS

The machine's opponents in the tournament were inspired by point money awarded to those who beat the computer or drew with it. All through the tournament, the sample computers were operated by master-strength players who kept score, operated the clock and annotated the games. These annotations have been provided to the manufacturer as part of the rating service; such an arrangement is a novel and desirable form of employing professional chess-players, with high-level promises for the future.

The masters operating the computers were quite impressed by the level of the machine's play, though they didn't feel threatened by it themselves. All of them were experienced chess teachers, and of course had developed the ability rapidly to assess a student's progress by how certain key types of positions are handled. As they observed the games, they naturally paid special attention to such positions. The conclusion was that Super Constellation is vastly superior to earlier microcomputers in its ability to handle thematic chess positions, particularly in endgames, and has no serious weaknesses in its play aside from the usual computer inability to make long-range plans and to manage closed positions well.

Although some logistical problems were encountered in organizing the tournament, as is only natural for the first time, on the whole it worked out roughly as planned. Players who did not want to complete their playing schedule against the machine were the biggest problem, and two extra sessions had to be scheduled to make up the games that were missed.