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
Computer Chess Committee
Los Angeles

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!):

<table>
<thead>
<tr>
<th>Name</th>
<th>Rating</th>
<th>Win</th>
<th>Loss</th>
<th>Opponent</th>
<th>Rating</th>
<th>Win</th>
<th>Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephen Hall</td>
<td>2099</td>
<td>0.5</td>
<td>3.5</td>
<td>Gil Coronel</td>
<td>1960</td>
<td>1.5</td>
<td>2.5</td>
</tr>
<tr>
<td>William Torman</td>
<td>2089</td>
<td>0</td>
<td>3</td>
<td>Steven Pravdo</td>
<td>1958</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Alex Baltutis</td>
<td>2028</td>
<td>2</td>
<td>0</td>
<td>Tim Catledge</td>
<td>1952</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Robert Bryan</td>
<td>2016</td>
<td>2</td>
<td>0</td>
<td>Luis Villa</td>
<td>1951</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Paul Shuey</td>
<td>1996</td>
<td>0.5</td>
<td>0.5</td>
<td>David Welsh</td>
<td>1931</td>
<td>1.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Larry Neuton</td>
<td>1993</td>
<td>0</td>
<td>1</td>
<td>Eugene Motz</td>
<td>1913</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Brandon Eade</td>
<td>1986</td>
<td>2</td>
<td>1</td>
<td>John Shoosmith</td>
<td>1907</td>
<td>0.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Tim Thompson</td>
<td>1977</td>
<td>2</td>
<td>0</td>
<td>Arthur Kimes</td>
<td>1905</td>
<td>0.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

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 ma-
chine'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. 0-0 d5? This is prema-
ture, and turns out badly. 8. exd6 e.p. cxd6 9. Bf4: Super Constellation devel-
ops 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
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
21. ... Kxf6 22. Qxd6+ followed by mate.) 22. Bxh8 Raxh8 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. 0-0 Nxe4. The Open Defense,
a good choice for a computer since the machine gets active piece play. 6. d4
b5 7. Bb3 d6 8. dxe5 Be6 9. c3 Be7 10. Nbd2 0-0 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
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
looks as if White is close to equalizing, but the queenside-pawn majority
remains a threat. 22. ... Bb4 23. Rd6 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. Rac1? 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 Ke7 40. Bb7 Re5 41. Rxd3 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. Rac1?
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


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.