

HITECH CHESS REPORT

Hitech Defeats Denker in AGS Challenge Match

Hans Berliner

It has been difficult to find a forum where the best chess programs can play comparable humans with international titles. In response to this need, Shelby Lyman, the host of past Public Broadcasting Station (PBS) series on world chess championship matches, organized the AGS Challenge Match at the New School for Social Research in New York City. Funding for this event was provided by AGS Computers, Inc., a New Jersey-based software firm. The match was held September 22–25, with one game played each day, and was widely covered by the international press. Participating were Hitech, at 2407 then the highest-rated computer in the world, and International Grandmaster Arnold S. Denker, a former U.S. champion. Denker's rating of 2410 was comparable to that of Hitech. He had recently placed eighteenth in the U.S. Open Championship with a score of 8.5, 3.5 tied with, among others, the recent Carnegie-Mellon University chess machine sensation, Deep Thought.

On paper, the match figured to be close. However, Hitech scored a surprisingly lopsided win of 3.5, 0.5. This match was the first time a machine had defeated a grandmaster; at the time of the match, however, Denker was not playing as actively as he had at the peak of his career when he earned the grandmaster title.

The first game was drawn as Denker played rather cautiously with the white pieces. In the second game, Hitech was in command most of the way. Denker fought back hard and eventually achieved a difficult drawn position. At this point, however, he blundered and lost. Denker again blundered at a critical stage during the

third game and lost this match too. In the final game, Hitech played truly brilliantly, and reacted to a tiny error by Denker with an impressive series of moves that ended in a sacrifice which brought home the win. Everyone seemed impressed with Hitech's performance throughout the match, although it was clear the audience was divided in its sympathies. Denker was generous in his praise of Hitech, saying, "The machine gave me a real trimming; I am very impressed." The final game of the match follows with a few annotations.

Game 4

White: Hitech

Black: A. S. Denker

<i>W</i>	<i>B</i>
1. e4	c5
2. c3	d5
3. e:d5	Q:d5
4. d4	Nf6
5. Nf3	c:d4
6. c:d4	g6?

Black is deviating from the line he played in the second game, which resulted in a small advantage for white. However, the text is dangerous to black, as Hitech demonstrates.

7. Nc3	Qd8
8. Bc4!	Bg7
9. Qa4+!!	Nbd7?

Black is already in trouble, and after the text, he is demonstrably lost. The innocent-looking check had to be answered by the unappealing 9. Kf8. Move 9. Bd7 loses to 10. Qb3, O-O, 11. Ne5, where two pawns are attacked, and there is no good defense. On 9. Nc6, 10. d5 wins, and on 9. Qd7, 10. Bb5, Nc6, Ne5 wins. Now,

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Hitech plays an obvious sacrifice, which Denker anticipated; however, he overlooked white's strong thirteenth move.

10. B:f7+! K:f7
11. Ng5+ Ke8

All other moves lose immediately: 11. Kf8, 12. Ne6+ or 11. Kg8, 12. Qb3+, Qf7++ follows shortly.

12. Ne6 Qb6
13. Qc4!

This move is the star of the combination. If white plays the immediate 13. N:g7+, Kf7, his knight is trapped, and black wins. This move is what Denker expected. Now, however, N:g7+ and Nc7+ threaten. Hitech saw this possibility when it played its eighth move!! From now on, black continues to wriggle, but no hope exists of salvation. International Grandmaster and former U.S. Champion Larry Evans, watching the game on the Leisure LINC computer network, commented, "Black is busted."

Hitech appears to choose the quickest path to victory at each point.

13. Nf8

On 13. Rg8, Hitech intended 14. Nb5, Nf8; 15. N6c7+, Kd8; 16. N:a8, Qe6+; 17. Q:e6, N:e6; Bd2; the white knight trapped at a8 is then able to escape. However, black hopes to trap the knight at g7, but this move is easily circumvented.

14. N:g7+ Kd8
15. O-O

With a pawn ahead and its opponent's king trapped in the center, white combines caution with aggression. The text limits any counter-chances that black might have, while it prepares to let the white pieces loose on the black king.

15. Bd7
16. Re1 Qd6
17. Bg5 Rc8
18. Qf7

Threatening 19. R:e7, Q:e7, 20. B:f6

wins the queen. If now 18. h6, 19. Bh4, the threat is still there.

19. Rc6
19. Nb5 Qb4
20. d5! Q:b5
21. d:c6 Q:g5
22. c:d7! N6:d7
23. Rac1! Resigns

Black is the exchange down, and white threatens Qe8++. A possible continuation is 23. Nc5, 24. Qe8+, Kc7, 25. b4!, b6, 26. b:c5, and still more material is lost.

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