LOSING CHESS : BEATING FRITZ

When reviewing Fritz 11's playing of Giveaway (Losing) Chess last time, I remarked that it had beaten me 4-0 with Black despite always choosing a line known since 2001 to give White a forced win. The thought occurred to me that it might be instructive to play the winning book line against Fritz, and to see what happened. My original source, Lenny Taelman's site as reported in *VC* 41, is no longer available, but an alternative source

<http://voronet.francu.com/
~cata/nilatac/book.php>

now exists. Interestingly, the "books" do not appear to be identical.

Fritz, like all other practical playing programs, uses a "variator" to prevent it from playing the same line every time. It is therefore possible that somebody trying this experiment on a different machine, or with a different time limit, might find it playing differently. On my machine, however, and with its default time limit, it has always played the same as far as move 20. Fritz plays to the traditional rule that stalemate is a win for the player stalemated; its opponent here, Nilatac, plays to the FICS rule (stalemate is a win for the player with fewer men left) and its openings book was presumably calculated accordingly, but I don't think this affects the analysis here.

1	e2-e3	b7-b5
2	Bf1xb5	Bc8-b7?

A fatal error. According to Nilatac's openings book, all moves here apart from 2...Ba6, 2...e6, and 2...Nh6 have now been proved to lose.

3	Bb5xd7	Bb7xg2

Other moves lose by force.

4	Bd7xe8	Bg2xh1

4...Qxe8 loses by force, and 4...Qxd2 5 Kxd2 Bxh1 6 Bxf7 transposes.

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5	Be8xf7	Qd8xd2
6	Ke1xd2	Bh1-f3

This is the first point at which a future experiment might vary, since 6...Bd5 allows no win within the horizon of Stan Goldovski's *Giveaway Wizard* when running on my machine. All other moves lose by force.
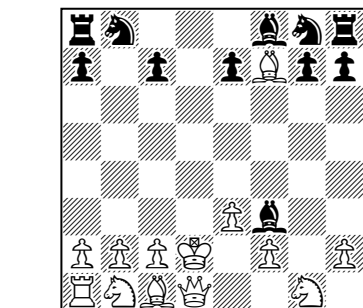
7	Bf7xg8	Rh8xg8

7...Bxd1 loses by force.

8	Qd1xf3	Nb8-d7

After any other move, Black has to answer 8 Qxf8 with 8....Rxf8, and he gets a rampant rook.

9	Qf3xf8	Nd7xf8
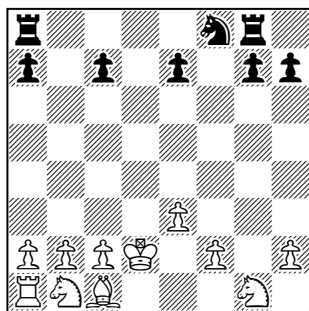
The cut and thrust of the opening is over, and even without the computer's proof of loss we would assess Black's prospects as poor. White can hope to probe forward in the centre and force Black's knight to move, after which Black's rooks will be linked and White can aim his own rook at the eighth rank. Black, in the meantime, is condemned to passivity.

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10	e3-e4	Rg8-h8

10...e5 would prevent a further pawn advance, but 11 Kd3 releases the bishop and leads to a forced win (for example, 11...Rh8 12 Bh6 gxh6 13 f4 exf4 14 Ke3 fxe3 15 Nd2 exd2 16 Rc1 and White can cope with any promotion).

11	e4-e5	h7-h5
12	Kd2-e3	

An immediate advance to e6 would presumably not have worked (or at least has not been proved to work), but now it can be followed by Kd4 and so it becomes a threat. The blocking move 12...e6 can be shown to lose to 13 Nc3, so Black hides his knight.
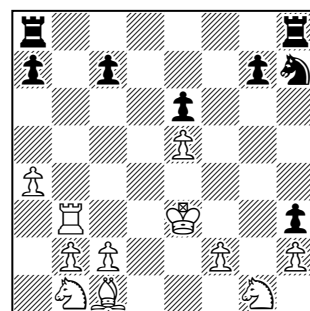
12	...	Nf8-h7
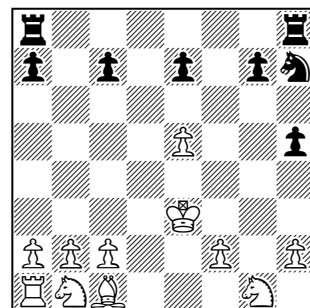
Now White goes for the eighth rank.

13	a2-a4	h5-h4
14	Ra1-a3	e7-e6
15	Ra3-b3	h4-h3

Black has successfully stopped White from playing Rb8, but now he has to prevent his own rook from being lured through to h2.
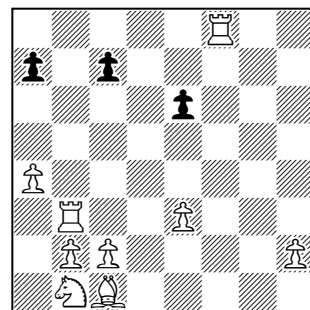
16	Ng1xh3	Nh7-f6

16...Ng5 loses off-hand (17 Nxg5 Rxh2 18 Nxe6 Rxf2 19 Nxg7 Rxc2 20 Rb6 etc).

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17	e5xf6	Rh8xh3
18	f6xg7	Rh3xe3
19	f2xe3	Ra8-f8
20	g7xf8R	

We have reached the ending, and this is the first point at which Fritz played different moves on different runs. Let us therefore stop and take stock.

White will have to let at least one Black pawn promote, but he has plenty of time to plan for its arrival. Promotions to queen, rook, bishop,

and even knight can probably be met by mass giveaways. Promotions to king probably cannot because of the distant h-pawn, but White can hope to give away everything else, promote this pawn to a rook, and win with rook against king.

The first move Fritz played was

20	...	c7-c5 ,

after which the analysis which I had downloaded from Lenny Taelman's site gave

21	Rb3-b6	a7xb6
22	b2-b4	c5xb4
23	a4-a5	b6xa5
24	Bc1-a3 .	
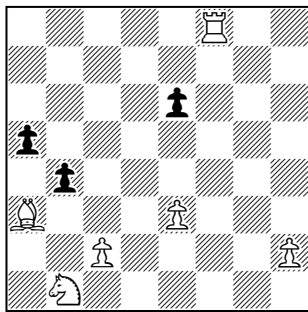
At this point, it stopped, presumably because it could see a forced path to a position known to be won. (I don't know the background, but it would appear that the definitive results for all three-man and four-man endings were available during the calculation.) But what is obvious to a computer is not always obvious to you and me (there are positions even with three men whose correct evaluation had to await computer analysis), so I asked *Wizard* to prove it. It gave me **24...bxa3 25 Nxa3 a4** (25...e5 see **B**) **26 Rb8 e5 27 Nc4 a3** (27...e4 see **A**) **28 Nxe5 a2 29 Rb2** :
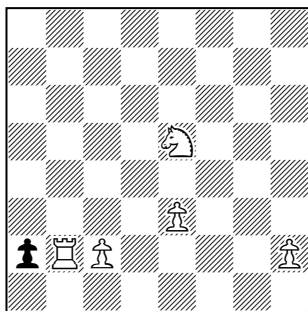

29...a1K (other promotions allow mass giveaways) **30 h4 Kxb2 31 Nd3 Kxc2 32 h5** and wins with R v K, or

(A) 27...e4 28 Nd2 a3 29 Nxe4 a2 30 Rb2 and much the same (we have the previous diagram with the knight on e4 instead of e5), or **(B) 25...e5 26 Rb8 e4** (26...a4 rejoins the main line) **27 Nc4 a4** rejoining line **A**.

Back to the diagram after 20 gxf8R. Nilatac's book replied to

20	...	c7-c5

by

21	Rf8-f5	e6xf5
22	Rb3-b6	a7xb6
23	e3-e4	f5xe4
24	b2-b4	c5xb4
25	a4-a5	b6xa5
26	Nb1-c3	b4xc3
27	Bc1-f4 ,	

and after Fritz's

27	...	e4-e3

it said "No further information in this branch" :
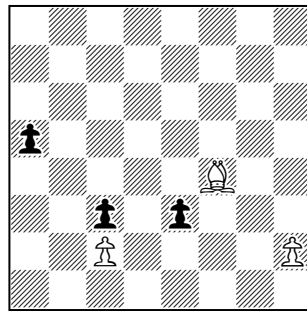
Again, I asked *Wizard*, and it gave me **28 Bxe3 a4 29 h4 a3 30 h5 a2 31 h6 a1K** (other promotions are easy) **32 h7 Ka2** (32...Kb1/Kb2 are clearly bad) **33 h8R Kb3** (33...Ka3 34 Rh5 Ka2 35 Rd5 Ka3 36 Bb6 Ka2 37 Rd4 Ka1 38 Bc5 etc, or 37...Kb3 38 cxb3 c2 39 Rd2) **34 cxb3 c2** :
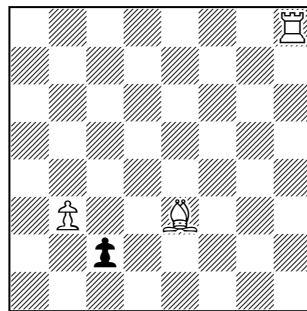

35 Bc5! (other moves lose to a bishop promotion, because even if White can give his bishop and rook away Black can play to give his bishop on c7) **c1K 36 Rh3 Kd1** (36...Kb1 37 Bb4 etc)

37 Rg3 Kc1 (37...Ke1/Ke2 38 Bf2 as below) **38 Bf2 Kd1** (38...Kb1 39 Be1 etc) **39 Bd4 Ke1 40 Bf2 Kxf2 41 b4** and again wins with R v K.

I have to say I prefer the line that Lenny Taelman's site used to give.

Fritz also played 20...e5 and 20...c6 on occasion, and

20	...	e6-e5

appears the more testing. The analysis on Lenny Taelman's site gave 21 e4, and stopped; Nilatac's book gave

21	e3-e4	a7-a6
22	Rb3-b6	c7xb6
23	a4-a5	b6xa5
24	Rf8-d8	a5-a4
25	Nb1-d2 ,	

and again "No further information" (after a White move this time).
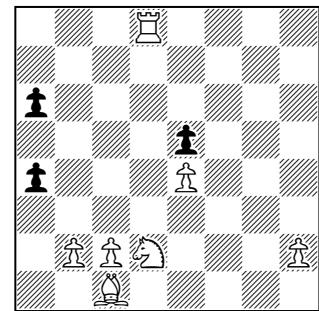
Fritz chose **25...a3** (25...a5 26 Nf3 a3 27 Nxe5! axb2 28 Bxb2 a4 29 Bd4 a3 30 Rb8 a2 31 Rb2 etc), and *Wizard* eventually found **26 bxa3 a5 27 Nb3 a4 28 Bb2! axb3 29 Bxe5 bxc2 30 h4 c1K** (30...c1N 31 Bd4 Na2/Ne2 32 Bc3 Nxc3 33 Rd3 Nxe4 34 Rc3 Nxc3 35 a4 Nxa4 36 h5 and wins by promotings to bishop) **31 Bb2 Kxb2 32 h5 Kxa3 33 h6** :
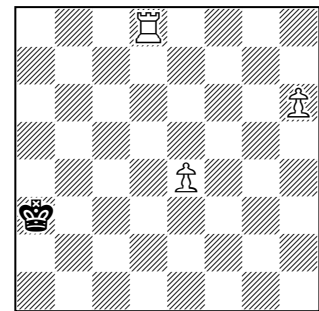
I don't have access to the definitive four-man results, but it appears that Black cannot stop White reaching a standard win with 2R v K, R + B v K, or R v K.