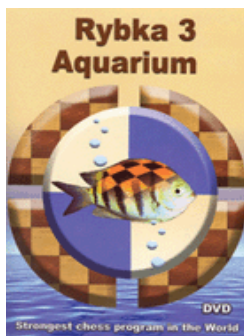




COLUMNISTS

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Dadi Jonsson



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Rybka Aquarium's New Opening Book

The first professional opening book for Rybka Aquarium has been released. The author is none other than Jeroen Noomen, a very experienced and highly regarded opening book author. Jeroen is a member of the Rybka team and the author of Rybka's private opening book, which is used in its most important competitions, including the World Computer Chess Championship.

The release of the Aquarium opening book coincides with release 3.1.0 of Aquarium, which adds support for i-Books as described in last month's [column](#). I will dedicate this month's column to the new opening book, but it also comes with an i-Book that helps users navigate the opening book and examine the variations.



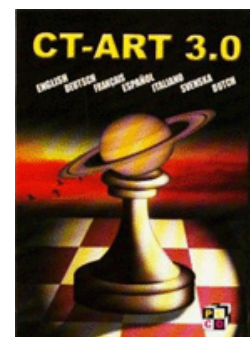
The i-Book is a convenient way to browse the Aquarium book

First, let's begin with an interview with the author, Jeroen Noomen.

Dadi Jonsson: You have been involved in computer chess for a long time and you have been writing opening books for chess computers and chess engines since 1989. What are the major changes that have occurred during that time from an author's perspective?

Jeroen Noomen: My first opening book for a commercial chess program was for Mephisto Polgar. That was when I was still a student. Shortly thereafter I became an employee at Hegener & Glaser, the producers of Mephisto programs. My next projects were the books for Mephisto MM V, the Milano, and the Vancouver. Basically you didn't have the great book tools available that we have now. A spartan editor was the best I could get and even a text editor was used in some cases! Furthermore chess programs were still miles away from GM level, which meant that printed opening books and GM games were the only reliable sources. Nowadays computer games account for 90% of the book, which is logical considering their imposing 3000+ strength. The biggest change, I would say, is the switch from hand typed opening books to automatically generated books. Everybody can make a big book by importing a large number of games into a book file. In the old days PCs were rare, but now we cannot live without them. The software that has been developed in the

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past 5-10 years is a blessing for book authors; many painstaking efforts in the 1990s have been replaced by automatic tools.



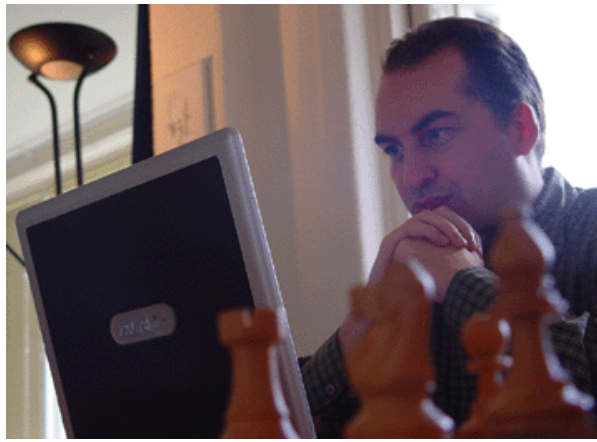
Jeroen Noomen

DJ: Chess strength is one of the factors that differentiate the Rybka team members from its competitors. Do you feel that your understanding of chess helps you as an opening book author? Considering the strength of Rybka, how would it affect your methods of working if you were a mere beginner at chess?

JN: Absolutely. Openings have always been my favorite aspect of the game, already since my eighth birthday, when I learned the game of chess. For some reason I was never able to crack the 2200 Elo barrier, as a result of which I decided to give up playing chess in favor of studying and analyzing opening lines. When I stopped playing I had around 2190 Elo, which is far from a decent IM level, but it still comes in handy to understand what is going on in a game. In many positions computer programs still do not have a clue what is going on and in such cases human knowledge is a strong factor. From time to time you have to feed the right moves to the program and guide it through the “mine fields” to avoid disaster. If I were only a beginner, I think that I would rely solely on the computer’s evaluation and the book statistics, which is rather dangerous. I always say, “Computer evaluations and statistics make people stop thinking for themselves.” It is always good to have a critical opinion and not take everything that the machine suggests for granted.

DJ: Your first opening books were targeted at one special chess computer or chess engine. How has this changed over time and what are the target groups for the Aquarium opening book?

JN: That is correct. My first books were specially designed for the Mephisto programs, after that I made books for Rebel, Pro Deo and Chess Tiger. They were mainly supporting the strengths and weaknesses of the chess program in question. Besides, these books were rather small when you compare them with the opening books being made today. With my last two books I am targeting a larger audience. Of course the books are meant to give Rybka a boost in tournaments and Elo lists, but that is not the only target. Fortunately Rybka is so strong, that she can play a wide variety of opening lines without looking silly. Even gambits are played rather well, as well as dynamic positions. Therefore, my Rybka books could be much wider and deeper than my previous books. As theory is developing rapidly and computer games have become a major factor, my idea was to combine GM games and computer games and thus make this book interesting for a wide public: IMs, GMs, correspondence players, strong tournament players and people interested in opening theory or engine-engine matches.



Jeroen working on his opening book

DJ: Nowadays your opening books are based on both grandmaster games and games played by strong chess engines. Can you somehow compare the progress being made in opening theory in these two categories?

JN: In my opinion the progress made in the computer area is much faster than in GM games. This is no surprise, as each day thousands of computer games are being played, opposed to only a few top GM games. Besides, in computer games everything is tried, while GMs are more cautious in their opening choice. On the other hand I regard each top GM game as interesting for my book, while with engine games you have to be more critical. It is quite common that there are a lot of non-interesting lines being played in the computer scene and you should prevent a lot of this stuff from entering your book. I am sure no serious player is really interested in the development of 1.a3 or 1.c3.

DJ: Do you see any signs that strong grandmasters are starting to follow opening theory developments in computer chess?

JN: Difficult to answer. But maybe “yes.” A year ago we saw a lot of games in the Petroff, Berlin Wall and Ruy Lopez, Marshall Gambit, aimed at getting a solid draw with black. With players like Radjabov and Carlsen playing a wider variety of opening lines (e.g. the Sicilian Dragon, or the return of the King’s Indian) and the Sicilian Najdorf returning to the highest scene, I am however seeing a trend that the top GMs are taking more risks again as black. An IM friend of mine once remarked that strong ideas by lesser players are often picked up very late by the GM elite, but perhaps this will change in the future. Even 2000 players have Rybka and can come up with a huge novelty. As soon as they understand this, we might see a shift.

DJ: The Aquarium book covers practically every opening that can arise. Nevertheless some openings and variations get a more thorough coverage than others. What were your criteria here?

JN: Of course I initially thought of making a kind of electronic ECO, covering virtually everything. But this was too large a project. Therefore, my main aim became to cover the lines that are popular today. I only used GM games and computer games of the past two years, concentrating my efforts on these lines. This means that you will probably find only a few examples in off-beat and less popular lines, but that is a result of the chosen path. With the Aquarium book I did a thorough update of my previous book and put most of my analysis time into the most popular lines. The idea is that if you make a book for a large audience, the most popular lines will attract the greatest attention. Of course you can discuss the fact that there are also many players that love off-beat lines and gambits. This is true, but if I had chosen to cover all lines, I would probably need another two years to complete the book.



Jeroen testing his ideas against Vasik Rajlich, Rybka's author

DJ: Was your approach to creating the Aquarium book different in some way compared to your previous books?

JN: The big difference was the use of IDeA in the Aquarium book. In my opinion, IDeA is the best opening book tool at this moment, a huge credit goes to the people who invented and developed this! If I have to give a prize for the best opening book tool made in the past ten years, it surely would go to IDeA. So there are a lot of new ideas, extra lines and novelties in the book created by IDeA. Another difference is that I have been more critical about dubious lines. In this respect the Aquarium book is a bit narrower than my previous books. But it makes the Aquarium book more solid, and on the bright side I have added a lot of extra alternatives in good & popular lines. As a whole I think the Aquarium book is broader than the books I made before.

DJ: Besides novelties from recent grandmaster tournaments and chess engine games, the Aquarium book contains numerous novelties of your own. What kind of analysis do you put such moves through before you recommend them in your book?

JN: Some novelties are rather straightforward: you analyze a game with the help of Rybka and at a certain point she suggests a better move. Some extra analysis is necessary to confirm the judgment and as soon as you find out this is true you put it into the book. More complicated positions need a more thorough approach and here IDeA was a real blessing. On several Sicilian Najdorf positions I spent a lot of hours before coming to a verdict. Many new and interesting ideas were found in the process and I put them all in the book. I realize that the ultimate test of these novelties are real games, so I hope that they will be tested in computer games, in correspondence games and hopefully in GM games, too.

DJ: Have you ever considered publishing a printed opening book or adding verbal annotations to your electronic opening books?

JN: Yes. With Dagb Nielsen I had a serious plan to publish a printed book series. We wanted to do something extraordinary and were very optimistic about the idea. We even had the contents page ready for our first book! However, as Dagb chose to develop his career rather than continue his involvement in computer chess, I had to abandon the idea. It is a pity that Dagb is not around anymore, I am sure a lot of people would agree. Still, I hope he will return some time! Regarding verbal annotations in my electronic books: yes, I've gotten feedback suggesting that; many players like ideas to be explained, both with signs like "!", "!" or "+=" and also what the author thinks of certain moves or plans. At some point I will have to add this to the book for sure. In any case the Aquarium book provides some extras like the CAP data and Rybka evaluations that make it easier to follow the lines and distinguish between good and bad lines.



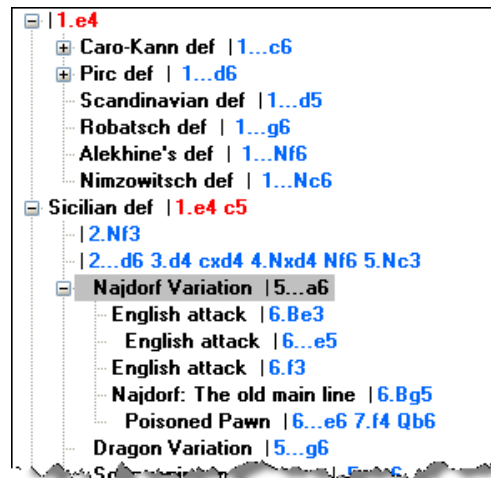
The real brain behind Jeroen's books!

DJ: Can you tell us something about your future plans regarding opening books?

JN: At this moment I have a few ideas that I am still studying. It could be a “simple” Rybka 4 book update, something special, or something really different. I am evaluating my two book releases and within the next month or two I want to make up my mind. I cannot tell you more about the exact plans at this moment, but I am sure we can return to that later.

The i-Book

As mentioned previously, the Aquarium opening book comes with an i-Book that gives users a more traditional access to the book contents than the tree view alone can do. The i-Book classifier gives you a table of contents for the opening book, so you can quickly locate specific variations.



The i-Book classifier for Jeroen's book

In this case I have selected the Najdorf variation, which is highlighted in the image (Najdorf Variation | 5...a6). When I do that the notation window is filled with information about the variation as shown in the next image.

```
[...] 1.e4 c5 2.Nf3 d6 3.d4 cxd4 4.Nxd4 Nf6 5.Nc3
a6 6.Bg5 see Sicilian-Najdorf: The old main line (6.Bg5)
[6.f3 see Sicilian-Najdorf: English attack (6.f3);
6.g3 e5 7.Nb3 /2008+/ (7.Nde2 /2008--/);
6.Be2 e5 7.Nb3 Be7 8.O-O /2008-/ 8...O-O
9.Be3 Be6 10.Qd2 Nbd7 11.a4 Nb6 (11...Rc8);
6.Bc4 e6 7.Bb3 b5 (7...Nbd7);
6.f4 e5 /2008+/ 7.Nf3 Nbd7 8.a4 Be7 9.Bd3
/2008+/ 9...O-O;
6.h3 e6 (6...Nc6; 6...g6);
6.Be3 see Sicilian-Najdorf: English attack (6.Be3)]
```

Information is automatically displayed about the selected variation

The cursor is placed after 5...a6, the starting move of the Najdorf variation. The colors of the moves are copied from the opening book:

- The *green moves* are the ones Jeroen recommends and chess engines using the book would play.
- The *red moves* would not be played by a chess engine using the book. Note that such moves are not necessarily bad (although they sometimes are). In many cases these are simply variations that Jeroen decided not to emphasize.
- You will also see *blue moves* in some positions. They lead by transposition to another position in the book.
- *Black moves* have not been analyzed specifically for the Aquarium book. It doesn't say anything about the quality of the moves. More analysis would be needed to come to a conclusion.

The move colors and other features are describes in greater detail in the excellent document, "The Rybka Aquarium book." You will find it in the Aquarium folder after installation. It is recommended reading for all users.

You will also see text comments in the notation, such as "see Sicilian-Najdorf: English attack (6.f3)." This gives the name of the variation, but also refers to the classifier. You can, for instance, find this particular variation below the one highlighted in the classifier image above.

Finally, there are colored annotations of the type "/2008+/" after some of the moves. These annotations are based on a comparison between the frequency of play in games from 2008 versus statistics from HugeBase. A '+' following the year means that the playing frequency increased by at least fifteen percentage points in 2008 ('--' stands for corresponding decrease), but for '+'/'-' the limit is ten percentage points.

The Opening Book

The opening book is displayed in the tree window. The installation program for the Aquarium book adds a new tree configuration, "Jeroen_Book" to Aquarium. If you want to view the book, open a game and select the Tree tab in the Ribbon. Then click the leftmost button and select the "Jeroen_Book" configuration from the drop-down list.

Here we see the book information for the starting position of the Najdorf variation.

Move	flg	Games	Success	Rating	CAP	Human (d2m)	Play
6.Be3		51182	57%	2705	+0.18	16953	50%
6.Bg5		14114	62%	2720	+0.26	21860	25%
6.f3		8666	62%	2715	+0.15	4842	15%
6.g3		1073	47%	2690	+0.04	3231	10%
6.Be2		1280	42%	2680	+0.15	20188	0%
6.Bc4		778	34%	2685	+0.15	12561	0%
6.f4		198	51%	2670	+0.11	6850	0%
6.h3		181	56%	2675	+0.18	1177	0%
6.a4		55	51%	2640	+0.07	3293	0%
6.Bd3		48	51%	2670	+0.04	1295	0%
6.Qf3		32	61%	2690	+0.11	113	0%
6.Qf2		22	41%	2640	+0.22	10	0%

The tree window and the available standard columns were discussed in “Introduction to Tree Configurations” and “Creating Tree Configurations” (see ChessOK Cafe, September and October 2008), so I will just give a brief explanation here with emphasis on columns that have a special meaning in Jeroen’s book:

- *Games*. This is the number of games where the indicated move was played in the database that Jeroen used for building the opening book.
- *Success* is the percentage score for the given move in Jeroen’s database.
- *Rating* is the average rating of those who played the move in Jeroen’s database.
- *CAP*. An update of the CAP analysis tree with the latest evaluations by Rybka 3 is available as a separate download when you buy the Aquarium opening book. You can overwrite your old CAP with the new one. The CAP files are stored in the ATrees directory (cap.*).
- *Human (d2m)*. This column shows the number of times a move has been played in games found in HugeBase, which are almost exclusively between human chess players.
- *Play %* gives the percentage distribution that is used for selecting moves when the book is used as an opening book for a chess engine. In the position shown in the image above, 6.Be3 would be played most often or in 50% of the games, followed by 6.Bg5 (25%), 6.f3 (15%) and 6.g3 (10%). Note that these percentages are displayed in bold type in the tree window. It means that they have been manually set by Jeroen. Otherwise the percentages are calculated automatically by Aquarium.

For more details about these and other available book columns, please see “The Aquarium book” document mentioned above.

There is one interesting column, however, which is not mentioned in the document. First you have to download the y2008 tree (see the email you received with your serial number) and extract the zip-file into the ATrees directory. After that start Aquarium, select the “Jeroen_Book” configuration, and while viewing a game, select the Tree tab and click “Options.” The “Tree configurations dialog box will be displayed.

Name	Tree	Visible
Move%	JeroenTrees\aquarium_book	<input type="checkbox"/>
Success	JeroenTrees\aquarium_book	<input checked="" type="checkbox"/>
Rating	JeroenTrees\aquarium_book	<input checked="" type="checkbox"/>
Year	JeroenTrees\aquarium_book	<input type="checkbox"/>
Rybka	analysis	<input type="checkbox"/>
CAP	cap	<input checked="" type="checkbox"/>
Human (d2m)	statistics\d2m	<input checked="" type="checkbox"/>
d2m%	statistics\d2m	<input type="checkbox"/>
y2008%	y2008	<input checked="" type="checkbox"/>

Scroll to the bottom of the list of configuration columns where you will find the “y2008%” column. Select “Visible” to add “y2008%” to the displayed columns and click the OK button. Now the new column will be displayed in the tree window as shown below.

Move	flg	Games	Success	Rating	CAP	Human (d2m)	y2008%
8.Qd2		9350	57%	2720	+0.26	1513	74%+
8.g4		2124	52%	2725	+0.15	1072	23%-
8.a3		325	56%	2710	+0.22	76	2%
8.Bd3		155	52%	2765	+0.22	27	
8.Be2		39	49%	2695	+0.22	7	0%
8.Rc1		1	100%	2575			

The newly added column, “y2008%” is highlighted. We see that the

frequency of the move 8.Qd2 has increased by over ten percentage points in 2008 at the expense of 8.g4, which has declined in popularity.

From the ChessOK Labs

The release of the Aquarium opening book involved many quality checks, both by Jeroen and ChessOK. Such checks may result in new tools for the book authors in the future, while others will remain internal tools, and some will be abandoned in favor of more powerful methods.

One of the methods currently being investigated is comparing book recommendations with analysis available from other sources. In this case, evaluations from the extensive CAP database with Rybka evaluations. The idea is to find positions where those two sources differ in their recommendation (e.g. a move with a high CAP evaluation that is not recommended in the book). Such positions would need to be checked to make sure that nothing is being overlooked. This work is in progress, but some of the results can be found on this web page: [Aquarium book vs. CAP evaluations](#).

We'll examine two results from the comparison between the Aquarium book and the CAP analysis, but first let's take a look at the big picture. The Aquarium book contains 11½ million positions. Some of those are clearly more important than others, but nevertheless this number shows that it is not possible to check every important position manually. That's why ChessOK is experimenting with automatic methods. The comparison for a particular position can lead to one of three results:

1. The difference between the opening book and the CAP evaluations is insignificant.
2. There is a significant difference due to inaccuracy in CAP evaluations.
3. There is a significant difference and there is an inaccuracy in the book.

Clearly, a huge number of positions will end up in 1), so we don't need to investigate them further. We need to take a closer look at other positions and only then will we know if they belong to 2) or 3). They will be subjected to further analysis and various heuristics until we end up with those positions that could seriously impact the quality of the book. The author of the book can reduce the number even further by eliminating positions that he has already analyzed deeply.

I have two randomly selected examples from the ChessOK analysis. They are only meant to illustrate the type of results that can be expected.

The following position comes from *Arizmendi – Grischuk*, Reykjavik 2000, after White's ninth move in the King's Gambit.



Move	Rtg	Games	Success	Human	CAP	Rybka	CAP new
9. Qd2		1	100%	12	-0.18		+0.33
9. Qd2		1	100%	2	+0.29	-0.18	+0.22

The tree window below the board shows two moves in the Aquarium book, the red move 9...Qe7 and the green move 9...0-0. The CAP analysis included with the Aquarium book, however, recommends 9...Qe7 with an evaluation of -0.18 instead of 9...0-0 with a +0.29 evaluation (see the CAP column). Let's find out what is causing these different move recommendations.

Looking at CAP line we continue 9...Qe7 10.O-O Bxe5 11.Bb5+ Bd7 {-0.48}.

Rybka gives Black the advantage here, although we can see that position looks dangerous for Black in spite of his extra pawn. So we run infinite analysis and continue the forced line

12.dxe5 Qxh4 13.Rxf4 Nxf4 14.Bxf4 and now, after several minutes of analysis, we see that the evaluation changes to White's advantage. Even in this gambit line, we see that Jeroen's move selection is based on careful analysis.

The second example is a position from *Van Wely – Carlsen*, Nice 2008: 1. d4 Nf6 2.c4 e6 3.Nc3 Bb4 4.Qc2 d5 5.a3 Bxc3+ 6.Qxc3 c5 7.dxc5 d4 8. Qg3 Nc6 9.b4 e5



The Aquarium book recommends 10.e4 as was played in the game, but comparison with CAP reveals the new move 10.Qg7!. Careful analysis confirms that the CAP move gives White an advantage. Note, however, that the move 6...c5 is red in the book, so an engine using the Aquarium book would never end up in this position playing the black side. That is also possibly the reason why this position was not carefully analyzed.

Next month I plan to continue the discussion of i-Books, but a lot can happen in one month as we have seen. Perhaps another surprise release will see the light of day and I will have to change my plans once more.

Many of the Chess Assistant programs described by Dadi in this column are available in the [ChessCafe.com Online Catalog](http://ChessCafe.com).

Do you have a question about a Chess Assistant product? Send it along and perhaps it will be answered in an upcoming column. Please include your name and country of residence.

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