

Pairing-Allocated Bye

by

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Introduction

FIDE Handbook, C.04.1.c Basic rules for Swiss Systems defines the Pairing-Allocated Bye (PAB).

Should the number of players to be paired be odd, one player is unpaired. This player receives a pairing-allocated bye: no opponent, no colour and as many points as are rewarded for a win, unless the rules of the tournament state otherwise.

During the SPP meeting in Batumi 2018, and the Online meeting in 2021 there were a lot of discussions, both about how many points should be rewarded for PAB, and who should get it.

The current rule states that PAB shall be rewarded with as many points as rewarded for a win. The main task for this discussion is to find arguments for Full point PAB or Half point PAB. Zero point PAB is not discussed since it will not be accepted by players.

This discussion will also briefly investigate the problem of who shall be assigned the PAB. In this paper two models are discussed. The current rules (Swiss), and a "Man from the street model". In the latter model we add a virtual player with no points, no color preference. This virtual player has forfeit loss in all games, and no player can meet this virtual player more then once. With this model, the median ranked player is assigned the PAB in the first round. Thus, the model is also named "median".

Method

The best way to test out pairing systems is to run simulations. From tournaments simulations it's possible to extract parameters and compare them. Typical parameters are "final score based on rating", "who is likely to get the PAB" (both based on initial rank, and on final standing). Is it possible to say anything about the advantage or disadvantage of getting a PAB?

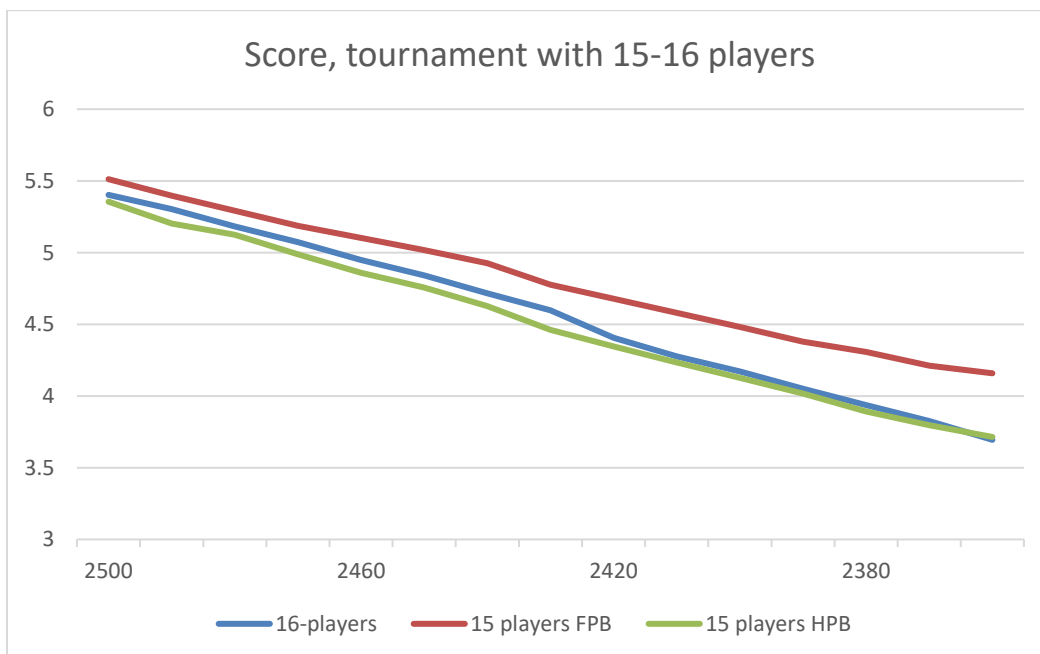
The selection of test tournaments is important to get valuable information from the simulations. The test tournaments used are 9 round tournaments with 15, 27 and 149 players and with different range in rating span. For performance measure it has been compared to 16, 28 and 150 players tournaments. All simulations have been done with 10000 tournaments.

Performance

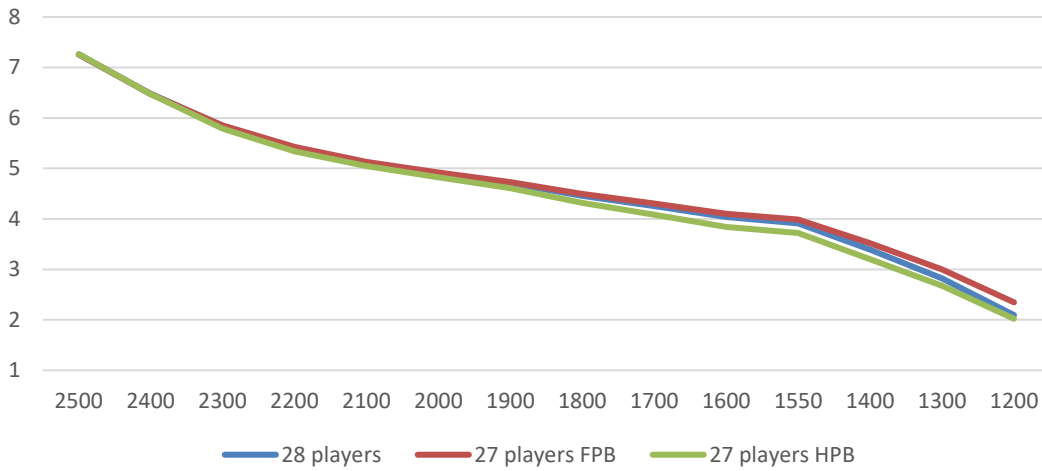
Performance is the average score for a player in a tournament.

The test tournaments are:

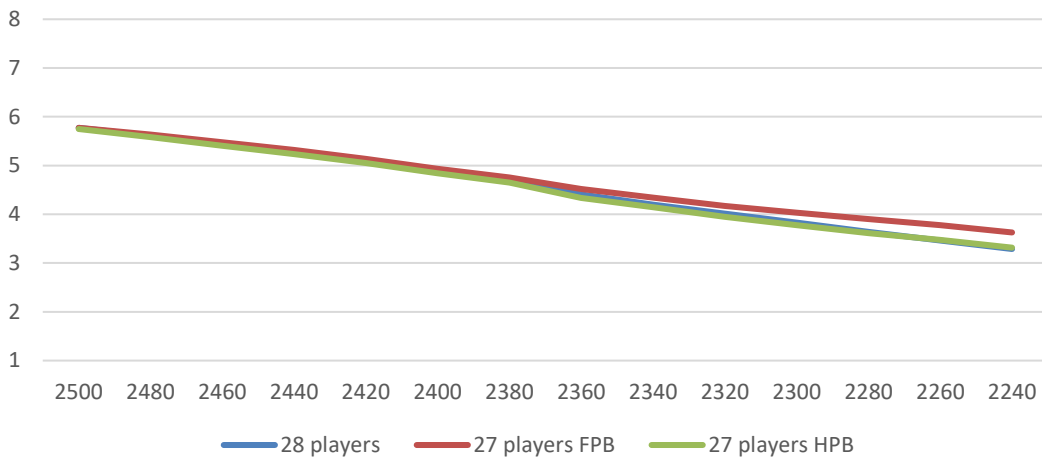
Tournaments		Rating		
Players	PAB	High	Low	Step
16	None	2500	2350	10
15	FPB	2500	2360	10
15	HPB	2500	2360	10
28	None	2500	2446	2
27	FPB	2500	2448	2
27	HPB	2500	2448	2
28	None	2500	2230	10
27	FPB	2500	2240	10
27	HPB	2500	2240	10
28	None	2500	1150	50
27	FPB	2500	1200	50
27	HPB	2500	1200	50
150	None	2500	1010	10
149	FPB	2500	1020	10
149	HPB	2500	1020	10



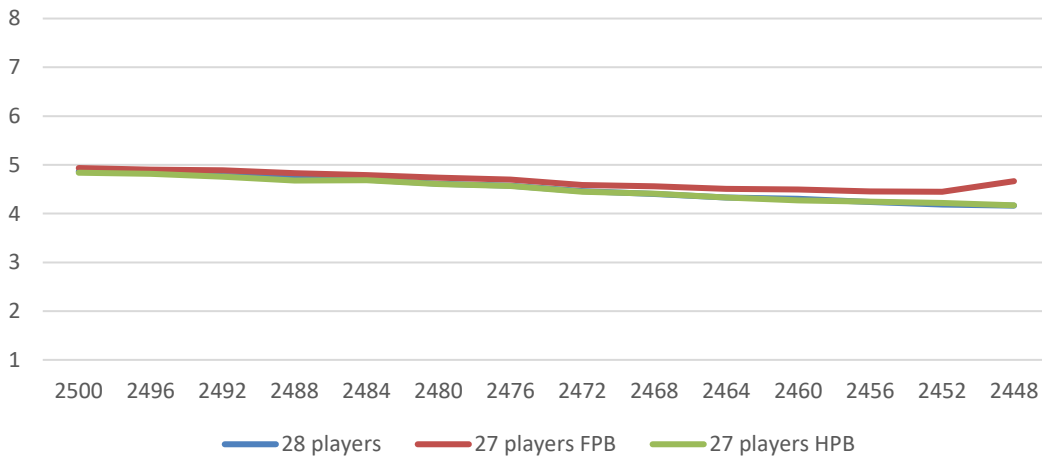
Score, tournament with 27-28 players

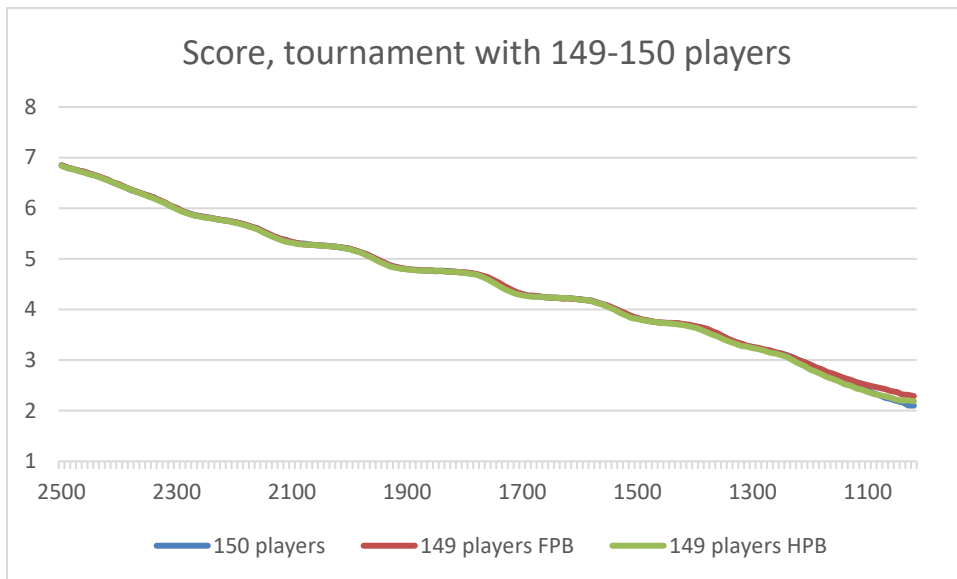


Score, tournament with 27-28 players



Score, tournament with 27-28 players





For all the tested tournaments, a Half point PAB gives a score performance very close to a distribution where there are no PABs (with one player more). The advantages for players that receives a PAB are highest in small tournament, and in tournaments with low rating span.

From the first diagram for Full point PAB, we see that the performance for the lowest rated player is 0.46 higher compared to a 16 players tournament without PABs. For the highest rated player the performance is 0.11 higher compared to a 16 players tournament without PABs. The total advantage for the lowest rated player is $0.46 - 0.11 = 0.35$.

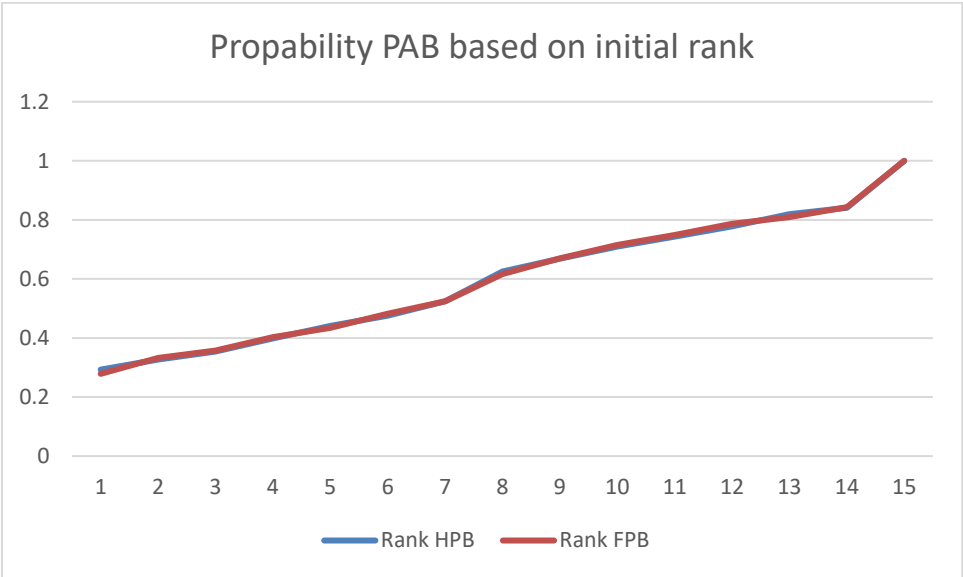
In our test tournaments the advantage of having a Full point PAB is between 0.19 and 0.43 points, while the advantage of having Half point PAB is less than 0.10.

Tournaments		Rating			Parameters
Players	PAB	High	Low	Step	Advantage
15	FPB	2500	2360	10	0.35
15	HPB	2500	2360	10	0.07
27	FPB	2500	2448	2	0.43
27	HPB	2500	2448	2	0.03
27	FPB	2500	2240	10	0.34
27	HPB	2500	2240	10	0.05
27	FPB	2500	1200	50	0.25
27	HPB	2500	1200	50	-0.08
149	FPB	2500	1020	10	0.19
149	HPB	2500	1020	10	0.10

PAB distribution

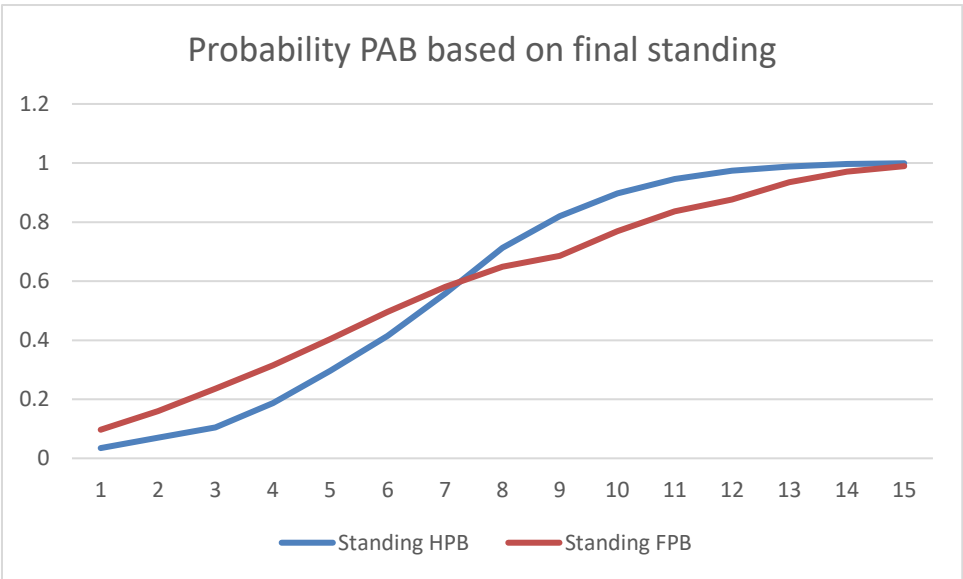
Which players are assigned to a PAB, and how this is distributed on the final standing seemed like an interesting parameter, but it was not. The players that receive PAB is the same regardless if they are assigned Half point PAB or Full point PAB.

An example from a 15-players tournament rated 2350 to 2500.



The reason is of course that the rule for choosing PABs is the same, and you will not have PAB twice.

There is still a difference in PAB distribution in final standing due to that the players that received a PAB has less point and therefore lower rank in the final standing.



Experiences

Two tournaments have been completed with Half point bye. Half point PAB was a part of the invitations/regulations.

- 1) A regional tournament, 89 players divided in 3 rating groups, 5 rounds
<https://www.nordstrandsjakk.no/turneringer/ngpl22/standing.html>
only 5 PABs. One player was very angry for only getting 1/2p for PAB, and it should be noticed that he was had forfeit loss in the previous game due to using his phone during the game (not for cheating) and ended as number 35 of 36 players. Only a few other questions about this.
- 2) Norwegian championship, 384 players divided in 15 groups, 9 rounds.
<https://www.nordstrandsjakk.no/turneringer/nm2022/standing.html>
44 PABs. Two players protested and thought this was unfair. The first one had his PAB in the first round, and felt like his winning chances were lost. He ended up with 50% score. The second player had his PAB in round 6, and ended as number 24 of 25. The remaining players accepted Half point PAB with no complaints.

Discussion

Full point PAB:

The most important argument for keeping Full point PAB is that a player must retain the opportunity to score 100%. Some also see it as compensation for not being allowed to play.

Half point PAB:

The most important argument for using Half point PAB is that a Full point PAB gives unreasonably high score for not playing. Through the Swiss pairing rules, we try to give PAB to the weakest players, and the expected result if he has had an opponent would be less than 0.5. To give a compensation more than half point is to give PAB players an advantage in the tournament, especially if the tournament consists of players with almost equal playing strength.

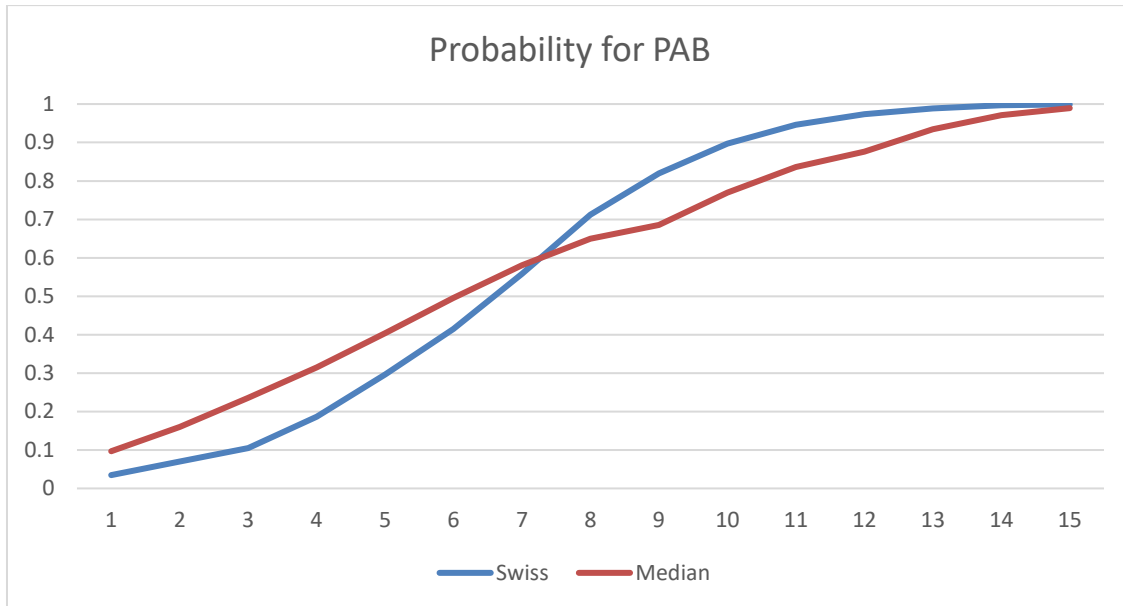
An interesting observation from the tests is that in tournament with a huge rating span, the performance for a low rated player is almost the same regardless he gets a Half point or Full point PAB. This is probably due to the pairing system, where he will meet weaker players after a Half point PAB. So, the Full point PAB compensation for not being allowed to play is an illusion. You just end up losing to stronger players.

With HPB and a limited number of players there are still possible to win the tournament if you win the remaining games, so to start with Half-Point PAB don't disfavor you from winning the tournament.

In big tournaments with a broad rating span, a player receiving a PAB will probably have no possibilities of winning the tournament anyway.

Man from the street model

Man from the street model (or Median model), is based on using a virtual player that loses all his games. The main problem is that we want the players in the bottom of the table to have the PABs, however in the man from the street model we will assign PABs to stronger players. In the extreme, we assign PAB to a player that fight for a title norm.



For a test tournament with 15 players we see the probability for PAB based on final standing. This is not compatible with our goal to assign PABs to the weakest players in the tournament.

A final remark is that in most tournaments there are no such thing as a man from the street. Many tournament have rating groups, and “the man from the street” will also belong to the rating group. Even in big open tournaments, the weakest player is far stronger than “the man from the street”. This gives a contradiction between the preconditions and the real world.

Conclusion

I will recommend changing FIDE Handbook, C.04.1.c Basic rules for Swiss Systems defines the Pairing-Allocated Bye (PAB).

Old rule:

*Should the number of players to be paired be odd, one player is unpaired. This player receives a pairing-allocated bye: no opponent, no colour and as many points as are rewarded for a **win**, unless the rules of the tournament state otherwise.*

New rule:

*Should the number of players to be paired be odd, one player is unpaired. This player receives a pairing-allocated bye: no opponent, no colour and as many points as are rewarded for a **draw**, unless the rules of the tournament state otherwise.*