89th FIDE Congress
Systems of Pairings and Programs Commission
Batumi, Georgia
30 September 2018, 9.00 - 11.00

Congress Meeting Minutes

Chairman: C. Krause (GER)
Secretary: R. Ricca (ITA)

Present: M. Held (ITA), O. Milvang (NOR), B. R. Unhjem (NOR), J. Prokopova (CZE), M. Corr (ENG), G. van den Bergh (RSA), A. McFarlane (SCO), Y. Hiebert (JPN), K. Parol (POL), J. Perez Llera (ESP), C. Gimenez Canadas (ESP), L. Cornet (BEL), W. Brown (USA), K. Bonham (AUS), P. Garcia Perez (ESP), J. Lehtivaara (FIN), T. Rich (USA), G. Oen (USA), T. Delega (POL), I. Vereschagin (RUS), S. Press (PNG), A. Burstein (ISR), S. de San Vicente (URU), A. Vardapetyan (ARM), Z. V. Tilman (TLS), K. Daniel (BAR), U. Hernandez B (VEN), M. Pahlevanzadeh (IRI), O. Prohorov (UKR)

1. Endorsed programs overview

The Commission reported on the current endorsement situation and the possible endorsement of the program Sevilla, whose deadline for a favourable report was extended indefinitely.

2. Draft of the (revised) FIDE Dubov System

The Commission presented the work made on the Dubov System.

Some articles, about which the Commission could not reach a final decision, were debated and a vote was asked to the attendants. The following decisions were thus reached (references are to the articles as mentioned in the document published in the Congress proceedings):

- (C.6) minimize the score differences in the pairs involving upfloaters, i.e. maximize the lowest score among the upfloaters (and then the second lowest, and so on)
- (C.7) dropped
- (C.9) not presented (dropped)
- order of upfloaters protection: C.11, C.12, C.10
- C.8 precedes C.11/C.12/C.10

The draft so modified *(see Annex-1)* has been approved.

Incidentally, with the above changes, Dubov System will have a different behaviour - thus, currently endorsed programs (i.e. Vega) should undergo an endorsement renewal.

A letter was received from IA Pierre Dénommée *(see Annex-2)*, correctly pointing out that the Commission did not address some issues of the Dubov System. This was because the current aim was only to make the Dubov System compliant with article C.04.2.A.4. However, the Commission will issue a technical recommendation about the tournaments for which the Dubov System is unsuitable.

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3. Endorsement of the Vega implementation of the Burstein System

The subcommittee appointed by last year's Congress, to prepare a report on whether Vega is suitable for the endorsement presented its report *(see Annex-3)*, which was approved.

A mandate was therefore given to the Commission to reword the Burstein System rules as required in order to comply with C.04.2.A.4.

The rules will be defined by IA Almog Burstein, who has offered his collaboration, and inserted in the general wording schema already used for FIDE (Dutch) and Dubov systems.

4. Proposals for the amendment of Swiss rules

The Commission proposed some amendments to the rules for 2021 and the following ones were approved in principle:

- to simplify the procedure dealing with the completion of the pairing of a round
- to assign the pairing-allocated-bye to a player in the lowest scoregroup as feasible
- to esclude from the assignment of a pairing-allocated-bye the players who have played fewer games among possible candidates

The exact wording will be defined by the Commission for the next Congress.

The problem of assigning a full-point pairing-allocated-bye to low rated players, especially in the early rounds, was pointed out by the Commission and acknowledged.

After debating some proposals to address the problem (the most likely acceptable of which is giving just a half point for the pairing-allocated-bye), the Commission was asked to analyze it in deeper detail.

A preference was expressed, stating that a player who received a full-point-bye should not subsequently receive a pairing-allocated-bye, but a final decision was not reached.

5. Team pairings rules

The Commission postponed the report on the status of the project until next Congress.

Christian Krause
(Chairman)

C.04.4.1 Dubov System

Originally approved in 1997, the current version is to be approved by the 2018 General Assembly.

Preface:

The Dubov Swiss Pairing System is designed to maximise the fair treatment of the players. This means that a player having more points than another player during a tournament should have a higher performance rating as well.

If the average rating of all players is nearly equal, like in a round robin tournament, the goal is reached. As a Swiss System is a statistical system, this goal can only be reached approximately.

The approach is the attempt to equalise the average rating of the opponents (ARO, see A.6) of all players of a scoregroup. Therefore, the pairing of a round will now pair players who have a low ARO against opponents having high ratings.

A. Introductory Remarks and Definitions

A.1 Rating

Each player must have a rating. If a player does not have a rating, a provisional one must be assigned to the player by the arbiter.

A.2 Initial ranking list

See C.04.2.B (General Handling Rules - Initial order)

Each time a player's rating is introduced or modified before the pairing of the fourth round, the arbiter must re-sort the initial ranking list according to the aforementioned section.

A.3 Scoregroups and pairing brackets

A scoregroup is composed of all the players with the same score.

A (pairing) bracket is a group of players to be paired. It is composed of players coming from the same scoregroup (called resident players) and (possibly) of players coming from lower scoregroups (called upfloaters).

Note: Unlike other systems, there are no downfloaters in the Dubov System.

A.4 Byes

See C.04.1.c *(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 regulations of the tournament state otherwise).*

A.5 Colour differences and colour preferences

The colour difference of a player is the number of games played with white minus the number of games played with black by this player.

The colour preference *(also called: **due colour**)* is the colour that a player should ideally receive for the next game.

a. An absolute colour preference occurs when a player's colour difference is greater than +1 or less than -1, or when a player had the same colour in the two latest rounds he played. The preference is white when the colour difference is less than -1 or when the last two games were played with black. The preference is black when the colour difference is greater than +1, or when the last two games were played with white.

b. A strong colour preference occurs when a player's colour difference is +1 (preference for black) or -1 (preference for white).

c. A mild colour preference occurs when a player's colour difference is zero, the preference being to alternate the colour with respect to the previous game he played.

d. Players who did not play any games are considered to have a mild colour preference for black.

A.6 Average Rating of Opponents (ARO)

ARO is defined for each player who has played at least one game. It is given by the sum of the ratings of the opponents the player met over-the-board *(i.e. only played games are used to compute ARO)*, divided by the number of such opponents, and rounded to the nearest integer number (the higher, if the division ends for 0.5).

ARO is computed for each player after each round as a basis for the pairings of the next round.

If a player has yet to play a game, his ARO is zero.

A.7 Maximum upfloater

A player is said to be a maximum upfloater when he has already been upfloated a maximum number of times (MaxT).

MaxT is a parameter whose value depends on the number of rounds in the tournament (Rnds), and is computed with the following formula:

MaxT = 2 + [Rnds/5]

where [Rnds/5] means Rnds divided by 5 and rounded downwards.

A.8 Round-Pairing Outlook

The pairing of a round (called round-pairing) is complete if all the players (except at most one, who receives the pairing-allocated bye) have been paired and the absolute criteria C1-C3 have been complied with.

The pairing process starts with the assignment of the pairing-allocated-bye *(see B.0)* and continues with the pairing of all the scoregroups *(see B.1)*, in descending order of score, until the round-pairing is complete.

If it is impossible to complete a round-pairing, the arbiter shall decide what to do.

Section B describes the pairing procedures.

Section C defines all the criteria that the pairing of a bracket has to satisfy (in order of priority).

Section E defines the colour allocation rules that determine which players will play with White.

B. Pairing Procedures

Pairing-Allocated-Bye assignment

B.0 The pairing-allocated-bye is assigned to the player who:

a. has neither received a pairing-allocated-bye, nor scored a (forfeit) win in the previous rounds (see C.2)
b. allows a complete pairing of all the remaining players (see C.4)
c. has the lowest score
d. has played the highest number of games
e. occupies the lowest position in the initial ranking list (see A.2)

Pairing Process for a bracket

B.1 Determine the minimum number of upfloaters needed to obtain a legal pairing of all the (remaining) resident players of the scoregroup.

Note: A pairing is legal when the criteria C.1, C.3 and C.4 are complied with.

B.2 Choose the first set of upfloaters (first in the order given by rule D.1) that, together with the (remaining) resident players of this scoregroup, produces a pairing that complies at best with all the pairing criteria (C.1 to C.10).

Note: In order to choose the best set of upfloaters, consider that the ensuing bracket (residents + upfloaters) is paired better than another one if it better satisfies a quality criterion (C.5-C.10) of higher priority.

B.3 The players of the bracket are divided in two subgroups:

G1 This subgroup initially contains the players who have a colour preference for White, unless all the players in the bracket have yet to play a game *(like, for instance, in the first round)*. In the latter case, this subgroup contains the first half of the players of the bracket (according to the initial ranking list).

G2 This subgroup initially contains the remaining players of the bracket.

B.4 If players from the smaller subgroup (or from G1, if their sizes are equal) must unavoidably be paired together, a number of players equal to the number of such pairs must be shifted from that subgroup into the other one. Find the *best* set of such players and proceed with the shift.

Now, if the number of players in (the possibly new) G1 is different from the number of players in (the possibly new) G2, in order to equalize the size of the two subgroups, extract the *best* set of players from the larger subgroup, and shift those players into the smaller subgroup.

*Note: *Best*, in both instances, means the first set of players (first in the order given by rule D.2) that can yield a legal pairing that complies at best with C.7.*

B.5 Sort the players in (the possibly new) G1 in order of ascending ARO or, when AROs are equal, according to the initial ranking list - highest initial ranking first and so on.

S1 is the subgroup resulting from such sorting.

Note: The sorting of G2 players is described in D.3.

B.6 Choose T2, which is the first such transposition of G2 players (transpositions are sorted by rule D.3) that can yield a legal pairing, according to the following generation rule: the first player of S1 is paired with the first player of T2, the second player of S1 with the second player of T2, and so on.

C. Pairing Criteria

Absolute Criteria

No pairing shall violate the following absolute criteria:

C.1 see C.04.1.b *(Two players shall not play against each other more than once)*

C.2 see C.04.1.d *(A player who has already received a pairing-allocated bye, or has already scored a (forfeit) win due to an opponent not appearing in time, shall not receive the pairing-allocated bye).*

C.3 two players with the same absolute colour preference *(see A.5.a)* shall not meet *(see C.04.1.f and C.04.1.g).*

Completion Criterion

C.4 choose the set of upfloaters in order to complete the round-pairing.

Quality Criteria

To obtain the best possible pairing for a bracket, comply as much as possible with the following criteria, given in descending priority:

C.5 minimize the number of upfloaters.

C.6 minimize the score differences in the pairs involving upfloaters, i.e. maximize the lowest score among the upfloaters (and then the second lowest, and so on).

C.7 minimize the number of players who do not get their colour preference.

C.8 unless it is the last round, minimize the number of upfloaters who are maximum upfloaters (see A.7).

C.9 unless it is the last round, minimize the number of times a maximum upfloater is upfloated.

C.10 unless it is the last round, minimize the number of upfloaters who upfloated in the previous round.

D. Sorting criteria

D.0 Generalities

In the articles of this section, the schema below is followed:

a. A pool of P players is selected.

b. Each player in the pool is assigned a sequence number (from #1 to #P) according to a primary sorting criterion.

c. *In order to select a set of K such players, the sets will usually be sorted depending on the sequence numbers of their members, put in lexicographic order (exception is D.1.b). For instance, with K=2, the set {#1,#2} will precede {#1,#3}, the set {#1,#P} will precede {#2,#3}, and so on.*

Note. The term <u>initial ranking</u> *always refers to the definition in section C.04.2.B, stating that the highest ranked player is first and the lowest ranked player is last.*

D.1 Sorting the upfloaters

All those players that have a lower score than the resident players of the scoregroup to be paired, are possible upfloaters and constitute the selected pool (see D.0.a).

a. Main criterion

Each possible upfloater receives a sequence number, according to their score and, when scores are equal, to their initial ranking.

b. Sets of upfloaters

Because a set of upfloaters may be formed of players with different scores, all the possible sets are subdivided in containers. Sets belong to the same container if their players have the same scores.

Example: *Let's assume that #1,#2,#3 have 3 points, #4 and #5 have 2.5 points, and #6 has 1.5 point, and a set of two upfloaters is needed. Then {#1,#2} {#1,#3} {#2,#3} are part of the same container; {#1,#4} {#1,#5} {#2,#4} {#2,#5} {#3,#4} {#3,#5} are part of another container; {#1,#6} {#2,#6} {#3,#6} are part of a third container; {#4,#5} are part of a fourth container; {#4,#6} {#5,#6} are part of a fifth (and last) container.*

The containers are sorted along the lines described by criterion C.6.

The sets belonging to each container are sorted according to the lexicographic order of the sequence numbers they are formed of.

D.2 Sorting the shifters

Any player in the bracket having a colour preference for White (Black) is a possible White (resp. Black) shifter. The need for shifters arises when, in order to make or complete a pairing, some players seeking a colour are shifted to the subgroup of players initially seeking the other colour.

The possible White (resp. Black) shifters constitute the selected pool (see D.0.a).

a. White seekers are sorted in order of ascending ARO or, when AROs are equal, highest initial ranking.

Black seekers are sorted according to their initial ranking.

b. With such sorted list, assign the sequence numbers, starting with the player in the (remaining) middle of the list or, when two players are in the (remaining) middle, to the one with a higher position in the list.

Example: *if the sorted list contains seven players (in order: A, B, C, D, E, F, G), #1 goes to D (middle of the seven players), #2 to C (higher between C and E, both in the middle of the remaining six players), #3 to E (middle of the remaining five players), #4 to B, #5 to F, #6 to A, #7 to G.*

Rationale: Since the system tries to equalize the ARO of the White seekers (while the Black seekers are "tools" for reaching this goal), it is statistically better to shift White seekers with AROs in the middle *(their ARO is probably already equalized)*, and Black seekers with ratings in the middle *(because ARO equalization is usually performed better by Black seekers with extreme ratings)*.

D.3 Sorting G2 players (transpositions)

The players involved are the ones that end up in the G2 subgroup after the maneuvers described in article B.4.

Such players constitute the selected pool (see D.0.a).

a. The players in the G2 pool are assigned sequence numbers according to their initial ranking.

The sorted sets of G2 players are also called Transpositions.

Note: *If, for instance, players A, B, C (listed according to the initial ranking) are in G2, the different Transpositions are {A, B, C} {A, C, B} {B, A, C} {B, C, A} {C, A, B} and {C, B, A}, in that exact order.*

E. Colour Allocation rules

Initial-colour

It is the colour determined by drawing of lots before the pairing of the first round.

For each pair apply (with descending priority):

E.0 When both players have yet to play a game, if the higher ranked player *(the player who has more points or, when points are equal, a higher position in the initial ranking list)* has an odd pairing number, give him the initial-colour; otherwise give him the opposite colour.

Note: *Always consider sections C.04.2.B/C (Initial Order/Late Entries) for the proper management of the pairing numbers.*

E.1 Grant both colour preferences.

E.2 Grant the stronger colour preference.

E.3 Taking into account C.04.2.D.5, alternate the colours to the most recent time in which one player had white and the other black.

E.4 Grant the colour preference of the higher ranked player *(see E.0)*.

Comments on the Dubov Draft

by Pierre Dénommée

September 20, 2018

Dear Mr. Ricca,

Here is my small contribution to the renewal of the Dubov pairing system,

Executive summary

As an arbiter, I did use the Dubov Pairing system during a Zonal Tournament. To my best knowledge, this remains the highest level at which Dubov pairings have ever been used. I have also tried to used Dubov Pairing in local tournaments but, as the others arbiters who tried it in the province of Quebec in Canada, I have been forced to stop using it at the players' request.

I appreciate the work of the commission and its desire to improve the system, but in my opinion, almost none of the current proposals could make the system acceptable to the players.

The core problem of the Dubov system is that it give rise with good regularity to what players have named a *free game*. A *free game* occurs when the pairing system produce too easy pairings for the top seeds of a tournament, with often 500 rating points of difference or more between a top seed and his opponent. Being at the extremity of the rating scale, the top seeds, when they are Black seekers, are paired with White seekers having the lowest ARO even if those White seekers have a very low rating. Games such as 1 vs 100, or 2 vs 99 are considered unacceptable by the players. The core problem being that only some top seeds get those *free games* while other top seeds must work hard to deserve the point.

After the initial trial by a few arbiters, Dubov has been removed from the mainstream usage in the province of Quebec due to multiple players' complaints about the *free games*. Dubov can still be used in special circumstances, such as tournaments with a minimal rating spread (at most 300 points between the top and bottom seeds) or that last at least 7 rounds, although 9 rounds is better.

Unfortunately, nothing in the current draft seems to address the problem of the *free games* which is the most important factor for the players' acceptance of the system.

Respectfully submitted,

IA Pierre Dénommée

Problems with Dubov pairing

1 The too weak player

When a player is considerably weaker than the rest of the field, whoever is paired with this player will get paired with the strongest opponent possible during the next rounds.

Example, in this tournament, Peter TooWeak rating of 1200 is too low compared to the rest of the field

Dubov trouble 1					
Registered Players					
N	**Nom**	**Titre**	**Féd**	**FRtg**	**NRtg**
1	**Peter Alpha**	GM	CAN	2500	0
2	**Peter Bravo**	IM	CAN	2450	0
3	**Peter Charlie**	IM	CAN	2423	0
4	**Perter Delta**	FM	CAN	2300	0
5	**Peter Echo**		CAN	2250	0
6	**Peter Foxtrot**		CAN	2200	0
7	**Peter Gulf**		CAN	2150	0
8	**Peter Hotel**		CAN	2145	0
9	**Peter India**		CAN	2135	0
10	**Peter Juliet**		CAN	2123	0
11	**Peter Kilo**		CAN	2122	0
12	**Peter Lima**		CAN	2120	0
13	**Peter Mike**		CAN	2115	0
14	**Peter Novembre**		CAN	2106	0
15	**Peter Oscar**		CAN	2092	0
16	**Peter Papa**		CAN	2086	0
17	**Peter Quebec**		CAN	2050	0
18	**Peter Romeo**		CAN	2042	0
19	**Peter Sierra**		CAN	2036	0
20	**Peter TooWeak**		CAN	1200	0

Here are the first round pairings

Me.	Fed	Blancs	Pts	IDW	Résultat	IDB	Pts	Noirs	Fed
1	CAN	GM Peter Alpha	(0)	1	1 - 0	11	(0)	Peter Kilo	CAN
2	CAN	Peter Lima	(0)	12	0 - 1	2	(0)	IM Peter Bravo	CAN
3	CAN	IM Peter Charlie	(0)	3	1 - 0	13	(0)	Peter Mike	CAN
4	CAN	Peter Novembre	(0)	14	0 - 1	4	(0)	FM Perter Delta	CAN
5	CAN	Peter Echo	(0)	5	1 - 0	15	(0)	Peter Oscar	CAN
6	CAN	Peter Papa	(0)	16	1 - 0	6	(0)	Peter Foxtrot	CAN
7	CAN	Peter Gulf	(0)	7	½ - ½	17	(0)	Peter Quebec	CAN

Me.	Fed	Blancs	Pts	IDW	Résultat	IDB	Pts	Noirs	Fed
8	CAN	Peter Romeo	(0)	18	0 - 1	8	(0)	Peter Hotel	CAN
9	CAN	Peter India	(0)	9	½ - ½	19	(0)	Peter Sierra	CAN
10	CAN	Peter TooWeak	(0)	20	0 - 1	10	(0)	Peter Juliet	CAN

Pert TooWeak looses as expected. Let see what happen to his opponent, Peter Juliet in round 2

Me.	Fed	Blancs	Pts	IDW	Résultat	IDB	Pts	Noirs	Fed
1	CAN	Peter Juliet	(1)	10	0 - 1	1	(1)	GM Peter Alpha	CAN
2	CAN	IM Peter Bravo	(1)	2	1 - 0	16	(1)	Peter Papa	CAN
3	CAN	Peter Hotel	(1)	8	0 - 1	3	(1)	IM Peter Charlie	CAN
4	CAN	FM Perter Delta	(1)	4	1 - 0	5	(1)	Peter Echo	CAN
5	CAN	Peter Sierra	(0.5)	19	½ - ½	7	(0.5)	Peter Gulf	CAN
6	CAN	Peter Quebec	(0.5)	17	½ - ½	9	(0.5)	Peter India	CAN
7	CAN	Peter Foxtrot	(0)	6	0 - 1	12	(0)	Peter Lima	CAN
8	CAN	Peter Kilo	(0)	11	1 - 0	20	(0)	Peter TooWeak	CAN
9	CAN	Peter Mike	(0)	13	1 - 0	18	(0)	Peter Romeo	CAN
10	CAN	Peter Oscar	(0)	15	0 - 1	14	(0)	Peter Novembre	CAN

He finds himself on board 1 against the tournament highest seed. This is not an error, this is how Dubov pairings works. The White seeker with the lowest average rating of opposition gets paired with the highest rated black seeker. Because Peter Juliet rating is 2133, this is almost like a free pass for the tournament top seed. The players always complain loudly when a favorite for a price gets such an easy pairing. With 8 players at 1, the dutch system first attempt would be 5 vs 1, not 8 vs 1 .

Apart from this problem, the pairing 2 vs 16 on board 2 would be perceived as unfair by the players. It is legal according to Dubov pairing rules because player 2 has the highest ARO of all the White Seekers and player 16 has the lowest rating of all Black seekers.

In real life situations, Peter Juliet rating is often as low as 1600 and as such gives a free win to the top seed.

1.1 Proposed solution for too weak players

This is much harder than case 2 because it involves a player (Peter Juliet) who has a genuine color history. The only easy solution that I can think about is that if this player is a White seeker we should transfer him in priority to the Black seekers column if any transfer is required. After that, we should have two procedures depending on probability that Peter Juliet is a credible threat to win the tournament, or at least secure a prize. If he is not a credible threat, we should compute his ARO disregarding the rating of 1200, otherwise we must follow normal procedures.

2 Players without any official opponent

A player has no official opponent until he has played a real game containing at least on move for white and one move for black. All the players without any official opponent are considered to have an ARO of 0 by the Dubov system. This can give rises to serious advantage for some high seeded players.

Example, with the same players, except that players number 19 an 20 are no longer playing. This will remove all the problems caused by Peter TooWeak. We also give a 0 point bye in round 1 to player 18.

1	CAN	GM Peter Alpha	(0)	1	1 - 0	9	(0)	Peter India	CAN
2	CAN	Peter Juliet	(0)	10	0 - 1	2	(0)	IM Peter Bravo	CAN
3	CAN	IM Peter Charlie	(0)	3	1 - 0	11	(0)	Peter Kilo	CAN
4	CAN	Peter Lima	(0)	12	0 - 1	4	(0)	FM Perter Delta	CAN
5	CAN	Peter Echo	(0)	5	1 - 0	13	(0)	Peter Mike	CAN
6	CAN	Peter Novembre	(0)	14	0 - 1	6	(0)	Peter Foxtrot	CAN
7	CAN	Peter Gulf	(0)	7	1 - 0	15	(0)	Peter Oscar	CAN
8	CAN	Peter Papa	(0)	16	1 - 0	8	(0)	Peter Hotel	CAN
9	CAN	Peter Quebec	(0)	17	1F-0F	0	(0)	BYE	

Peter Quebec gets a point without playing because he his the lowest rated active player in this round.

Here are the round 2 pairings.

1	CAN	Peter Quebec	(1)	17	...	1	(1)	GM Peter Alpha	CAN
2	CAN	IM Peter Bravo	(1)	2	...	16	(1)	Peter Papa	CAN
3	CAN	FM Perter Delta	(1)	4	...	7	(1)	Peter Gulf	CAN
4	CAN	Peter Foxtrot	(1)	6	...	5	(1)	Peter Echo	CAN
5	CAN	Peter Hotel	(0)	8	...	3	(1)	IM Peter Charlie	CAN
6	CAN	Peter India	(0)	9	...	18	(0)	Peter Romeo	CAN
7	CAN	Peter Oscar	(0)	15	...	10	(0)	Peter Juliet	CAN
8	CAN	Peter Kilo	(0)	11	...	14	(0)	Peter Novembre	CAN
9	CAN	Peter Mike	(0)	13	...	12	(0)	Peter Lima	CAN

Peter Quebec is playing on board 1 against the highest rated player. This is giving a free point to the first seed of the tournament. This pairing is 17 vs 1.

Giving an easy opponent to the higher rated player in this way is legal under the Dubov pairings rules, but this give rise to loud protests by the players.

2.1 Proposed solution for players without any official opponents

Those players should be given an artificial ARO valid only as long as they have no official opponents.

Computation of ARO for players without any official game played in the tournament.

1. Those players shall never be considered as having an ARO of 0.
2. Those players shall receive the average ARO of the score bracket in which they are paired

A player having more points than another player during a tournament should have higher performance rating as well.

Nice change, to make matters clearer, I will give an example from the 3rd RIDEFF which did use FIDE Dutch pairings.

1	GM	Edouard Romain	FRA	72b1	54w1	17b1	125w1	5b1	2w½	8b½	11w1	7w1	8,0	49,5	7
2	GM	Shoker Samy	EGY	71w1	117b1	30w1	11b1	6w1	1b½	5w1	7b½	3w½	7,5	51,0	6
3	GM	Fargere Francois	FRA	108w1	43b1	16w0	63b1	30w½	39b1	31w1	26b1	2b½	7,0	46,0	6
4		Bolduc Steve	CAN	126b½	91w1	85b1	10w0	86b1	47w½	49b1	46w1	26b+	7,0	39,5	6

Steve Bolduc, did finish 4th on tiebreak and third equal, but his strongest opponent has been player number 10. He did achieve a great score with a low performance, this is what Dubov pairings are all about: trying to prevent that. Since then, this tournament has grown in prestige and the next edition will offer titles by registrations: IM 1st equal – title; Silver & Bronze – norm FM Silver & Bronze – title.

The possibility that a player could finish first equal with a dismal performance is quite real. All tournaments offering title by registration should use Dubov pairings.

A.2, the restriction on the modification of the initial ranking list after round 4 *may* act against the goal of the system. Although in the original system the initial ranking was meaningless after the first round (ratings and ARO were used) this might not be the case with this new version.

A.5.d players who have no played games and who are white seekers should be awarded, only for this round, an ARO equal to the average ARO of the score bracket.

A.7 very nice

B.0.c is an hindrance.

The dominating color is obviously the dominating color of the last score group. If there are 10 players at 0 points, 7 of which are white seekers and three of which are black seekers, the pairing allocated bye must be given to a White seeker. This is not something that can be removed from the pairing rules. Delaying the choice of the PAB, as in Dutch pairing is a more sensible choice because it allows us to choose the PAB that gives the highest quality of pairings.

B.0.d

Very nice improvement

B1

I am in favor of the old method of upfloating a player for a specific opponent. Because of this pairing system natural tendency to produce, in a score bracket with 14 players, pairings such as 1-14 and 2-13 which are hugely favorable to the top seeds, any pairing method that give those players (1 and 2) anything less than the highest rated opponent available could reduce the credibility of the winner.

Suppose that we have 4 floaters, including players 1 and 2 who did play opponents rated 600 points below them in the previous round.

1 2600	5 1200
2 2550	6 1300
3 2100	7 2200
4 2000	8 2300

Obviously, this is a big failure, even if this is objectively the best pairings. This gives two more free games to the top seeds, the players will complain loudly about such pairings. The 2200 and 2300 should have been paired against the top seeds even if this would result in more floaters.

C.6 minimize the score differences in the pairs involving

upfloaters, i.e. maximize the lowest score among the
upfloaters (and then the second lowest, and so on).

The core problem about the proposed treatment of floaters is that it does not take into account the specific objective of the Dubov system. It allocates colors fairly, but does nothing toward the realization of the primary objective that identical score should imply very close ARO.

When there are more White seekers, there is an excellent reason to pass the lowest AROs from G1 to G2, at least in the first round. Suppose everybody in a tournament is rated over 2000 except for one player rated 1001. Whoever did play this player in round one will have the lowest ARO, if this player is a White seeker, he will be playing on board 1 against a top seed. As I said before, this is highly undesirable because it gives an easy opponent to a top seed while the other top seeds must play much harder opponent. If we transfer this player into the Black seeker column, this will give him a chance to increase his ARO. The Committee is right that leaving in the extreme rating will accelerate the ARO equalization process, but in round 2, we sometime want to slow it down in order to avoid giving a *free game* to a possible tournament winner.

B4, passing players from G1 to G2 in order to achieve the best color allocation is likely to be wrong. Dubov usually achieve his stated goal at the price of a few *free games* and of a less than optimal color allocation. Giving priority to colors over the achievement of the fundamental goal is risky: we may not unable to achieve the fundamental goal. A few colors may need to be sacrificed in order to achieve the primary goal.

Addition to the draft

Both the current wording and the Draft have failed to mention this improvement.

In this score bracket, the 2450 and the 2100 have previously met, there are no other restriction to the pairings.

2500	2150
2450	2100
2200	1600

According to the actual wording, the proper transposition is the 2100 with the 1600, we always look down first, as in FIDE Dutch. This is detrimental to the achievement of the main objective. Assuming that, in order to equalize his ARO, the 2450 requires a 2100 opponent, less harm would be done by transposing the 2150 with the 2100. This means that, in general, the rating of the players being exchanged must be taken into consideration when choosing a transposition. We want to minimize the rating change compare to the *due opponent* (the one in the natural parings), this will improve ARO equalization.

ENDORSEMENT SUBCOMMITTEE REPORT FOR BURSTEIN PAIRING SYSTEM ENDORSEMENT (VEGA 7.6/bbpPairings)

In Goynuk Congress (2017), the SPP Commission decided to appoint a sub-committee to examine the request of a new endorsement for the Burstein pairing system, in compliance with Appendix A of section C.04 of the FIDE Handbook:

> ***C.04.A.6 - The first endorsement procedure for a pairing system***
>
> *A subcommittee of four people must be named by the SPPC at the first Congress that follows the application for the endorsement of a program, as long as such naming activity is inserted into the SPPC agenda. The subcommittee shall report to the next Congress whether the program is suitable to be endorsed.*

For the sub-committee, the following members were appointed:
- **Mario Held** (SPPC member);
- **Roberto Ricca** (SPPC secretary);
- **Jose de Jesus Garcia Ruvalcaba** (SPPC member);
- **Gunther van der Bergh** (QC councillor).

The following program underwent examination:
- **Vega 7.6 by Mr Forlano**

The program uses *bbpPairings* by Mr. Bierema as its pairing engine.

The programs showed some issues, which are reported in a section of their own. However, a thorough examination was not possible because the Swiss Burstein system rules were found to be subject to interpretation, and not clear and univocal enough to allow a decision on a certain number of instances, while rule C.04.2.A.4 requires the definition to be univocal to guarantee that the produced pairings are not debatable.

> ***C.04.2.A Pairing systems***
>
> ***A.4*** *The Swiss Pairing Systems defined by FIDE and not deprecated (see C.04.4) pair the players in an objective, impartial and reproducible way. In any tournament where such systems are used, different arbiters, or different endorsed software programs, must be able to arrive at identical pairings.*

A description of the found ambiguities follows.

PREFACE (GENERAL PRINCIPLES)

> ***C.04.4.2 – Preface*** *(abridged)*
>
> *… players having the same score should have met as equal opposition as possible… If the Sonneborn-Berger and/or Buchholz and/or Median, of all players in the same score-group, is nearly equal, the goal is reached. …*
>
> *The approach is the attempt to equalize the strength of the opponents of all players in a given score group. Therefore the pairing of each round will tend to pair players who have high Sonneborn-Berger (or Buchholz or Median) with players having low Sonneborn-Berger (or Buchholz or Median) in the same score-group. …*

The general principles of the system lie on the assumption that pairing a player having a high tie-break (viz. Sonneborn-Berger, Buchholz, Median) with an opponent having a low one, will equalise the values of such tie-breaks. However, this is not a straightforward consequence of such pairings, because paired players should have the same scores. Actually, there seem to be only a very loose connection, because a player having a high tie-break might be stronger than the opponent, and end up with a higher score.

This principle would however make much more sense if the first rounds, two or probably more, were paired in a more conventional fashion (viz. pairing players from the first half of the list against players of the second half). However, this device is not provided for by the rules.

PLAYERS' LIST ORDER AND TIE-BREAK SYSTEMS

The Burstein system rules sort the players to be paired in a scoregroup by means of a given sequence of tie-breaks (Sonneborn-Berger, Buchholz, Median, followed by Rating). However, an univocal definition of the tie-breaks is given neither explicitly nor by reference to other Rules or Regulations.

It seems therefore logical to resort to the standard definitions (which are now contained in two different sections of the Handbook, C.02.13 and C.05 Annex 3), but those have changed with time so that unplayed games have been computed in different ways. Moreover, no behavioural rules are specified in connection with different scoring system (e.g. 3-1-0), and especially with reference to the Sonneborn-Berger system. Even the formula itself for the calculation of virtual opponent's score is based on the classical 1-½-0 score scheme.

The implementation seems therefore to depend on the programmer's free choice. If the "current" tie-break rules are chosen, a change in those rules may make the system silently obsolete - or, worse, change its behaviour without anybody's knowledge.

We suggest that the tie-breaks might be defined inside the rules, for the purposes of the pairing system only.

SCOREGROUP COLLAPSING RULE

The collapsing rule (rule 6.6, see below) seems to apply only in the case in which both the two adjacent scoregroups cannot be paired. However, a careful observation of the system seems to suggest that this rule should apply when (at least) one of the two scoregroups is not pairable, in order to make a pairing possible.

> ***C.04.4.2.6 – Pairing procedures***
>
> ***6.6*** *If the SG from which the floater has been dropped is such that a complete pairing of all remaining teams in the SG cannot be made (or if the floater has already played every player in the next SG), then the floater shall be moved back to its original SG, trying the next possible combination according to the order of priority. If a complete pairing of all teams in two adjacent SG's cannot be made, then these two SG's shall be considered as one SG, and rules 6.1 – 6.5 shall accordingly apply.*

We ought to note that the rules use the notion of "complete pairing" without defining it – actually, the rules never state when a pairing is "complete". A reasonable definition may be that a pairing is complete if all the players, except at most one, have been lawfully paired.

Moreover, it is not clear if the current scoregroup should be "collapsed" with the next one (yet to be examined), or rather the previous one (already paired).

We also want to note that the rule cannot be applied recursively (because, in rule 6.6, only rules 6.1-6.5 apply!). Hence, if collapsing the scoregroups does not bring a complete pairing, the subsequent behaviour of the system is undefined.

FLOATERS' MANAGEMENT

The Burstein system does not give a definition of the term "floater". This may lead to an interpretation in which only the "odd" player – left out from a complete pairing of the bracket – is a floater. However, this interpretation does not agree with the customary definition of a floater – that is, a player paired outside the scoregroup it belongs to, with an opponent whose score is different from the player's own score.

We therefore suggest that the rules should explicitly define floaters and their behaviour.

SCORE DIFFERENCE MANAGEMENT

The system does not mention the possibility to float more than one player, nor to float again a floater two scoregroups down ("long floating") if needed. Instead of such devices, when a complete pairing is impossible, two scoregroups are merged in one collapsed heterogeneous scoregroup (see above, "Scoregroup collapsing rule"). This collapsed scoregroup is paired without any explicit protection for different scores, as the floaters could be anywhere in the pairing list (rule 3.2) and the pairing rule only takes into consideration players' compatibility and colour matching.

This might suggest an interpretation in contradiction with the basic rule C.04.1.e ("In general, players are paired to others with the same score") and with the rules of system itself (The Preface to the rules states that "... the pairing of each round will tend to pair players ... in the same score-group. ...").

We therefore suggest that the rules should explicitly specify how the difference in scores should be taken care of.

PAIRING COMPLETION CRITERION

At no point in the rules, the need to be able to guarantee the existence of at least one legal pairing for all the remaining (unpaired) players (i.e. the ability to complete the pairing, also called "Requirement Zero") is mentioned.

However, we may note that this criterion was only recently introduced in the Swiss FIDE (Dutch) system, and is now going to be introduced in Dubov system, so its absence in the Burstein system is natural enough. On the other hand, the Burstein system does not even provide for backtracking, except in a very limited way (see rule 6.6 above for the change of a badly selected floater) or either by means of drastic scoregroup collapsing.

ACCELERATED ROUNDS

Accelerated pairings are referred to in Rule 3.3 of the Burstein system:

> ***C.04.4.2.3 Basic pairings principles***
>
> ***3.3*** *For accelerating pairing, in the first two rounds, an 'imaginary' point shall be added to the score of each of the players in the top half of the initial list of participants (arranged in the order of their R). This imaginary point shall then be deducted before making the pairings of the third round.*

Rule 3.3 of the system seems unclear about whether an acceleration of the pairings may be applied, or rather should be applied, regardless of the number and/or characteristics of the players. The rule, as it is written, may grant both interpretations. Actually, the choice about acceleration should lie in the hands of the Organizer or Tournament Director, and Arbiter.

Moreover, indications about a possible interaction with other acceleration methods (e.g. Baku Acceleration, C.04.5), and required behaviour in such instances, seem to be in order.

An additional issue with pairing acceleration is that the rules do not specify whether the sorting tie-breaks should be computed with or without keeping into account the imaginary points used for the acceleration itself, giving ample leeway to the implementation to alter the behaviour of the pairing system.

Incidentally, the behaviour of Vega seems to suggest that the imaginary points are included in the computation of the tie-breaks.

<u>FIRST ROUND PAIRINGS</u>

The system does not clearly state how to pair the first round, if in the same manner as the other FIDE Swiss systems or in the same manner as for subsequent rounds. In particular, if the acceleration provided by rule 3.3 (see above) is used, the top half of the pairing list will contain only players with one imaginary point (who will therefore be paired among themselves). However, rule 5.1 (see below) for colour allocation, which addresses only the top half of the list, in this situation leaves the colour assignment for the bottom half to the interpretation of the reader.

> ***C.04.4.2.5 Colour allocation***
>
> ***5.1*** *In the first round, the colour assigned to player No.1 shall be decided by drawing a lot. All other odd numbered players in the top half of the initial list shall receive the same colour.*

<u>SCOREGROUPS PAIRING SEQUENCE</u>

The rules do not specify the order in which scoregroups should be paired – e.g. top to down, or top to median (or maybe modal?), bottom to median and then median itself (“Lim style”) – even if general considerations about the floaters description and management seem to indicate a top-down strategy.

<u>BYES MANAGEMENT</u>

The basic rules for Swiss systems specify that a previous pairing allocated bye, or forfeit win, will prevent the allocation of a bye by the pairing.

> ***C.04.1 Basic Rules for Swiss Systems***
>
> ***d*** *A player who has already received a pairing allocated bye, or has already scored a (forfeit) win due to an opponent not appearing in time, shall not receive the pairing allocated bye.*

The Burstein rule is more extensive, in the sense that any previous “unplayed point” will inhibit the allocation of apairing allocated bye:

> ***C.04.4.2.4 Odd number of players at the tournament:***
>
> ***4.1*** *A player who has already received a point without playing shall not receive a pairing-allocated bye.*

This is not in contrast with the general rules; however, it poses an interpretation problem when a player receives:

- two “half point byes”, when playing with the standard scoring system, or
- one “half point bye” with an alternative scoring system like 3-1-0 (i.e. where a “half point bye” is in fact worth one point), or
- one “full point bye”.

In fact, it is not perfectly clear whether this rule is actually intended to prevent a pairing-allocated bye in all the above situations.

<u>COLOUR ALLOCATION</u>

The current colour allocation rule is not clear about the behaviour of the system in comparing the colour histories of players.

> ***C.04.4.2.5 Colour allocation:***
>
> ***5.4*** *After pairing two players’ colours shall be assigned based on giving descending priority to:*
>
> - *... alternating the colours of both players regarding the first difference of their colour history going back from the previous round to the first round ...*

When not all the players played all the games, some colour histories contain "holes", and we are confronted with several interpretation problems:

1. it is not at all clear whether general rule C.04.2.D.5 below should apply (and we want to note in passing that some other systems explicitly specify that the rule must be applied)

> ***C.04.2.D Pairing, colour and publishing rules***
>
> ***D.5*** *Only played games count in situations where the colour sequence is meaningful. So, for instance, a player with a colour history of BWB=W (i.e. no valid game in round-4) will be treated as if his colour history was =BWBW. WB=WB will count as =WBWB, BWW=B=W as ==BWWBW and so on.*

2. it is not clear how to deal with "holes" set in different positions, eg. *BW=BWB* and *BBW=WB*, because the use of the word "round" gives no indication on how to deal with unplayed rounds

3. it is not clear how to deal with players who have the same colour difference but histories of different length (e.g. *WBBWWB* and *BWW=B=* or *WBWBWB* and *W=B=WB*)

VEGA ISSUES

As mentioned above, some of the rules for the Burstein system seem not to be clear and unequivocal enough to allow a complete screening of the software program. However, even with the partial examination carried out by the Subcommittee, some issues were discovered for which the rules seem to be clear enough but disregarded, so pointing them out seems to be appropriate.

PLAYERS' LIST SORTING CRITERIA

The Burstein system rules sort the players to be paired in a scoregroup by means of a given sequence of tie-breaks (Sonneborn-Berger, Buchholz, Median), followed by Rating.

Actually, Vega/bbpPairings uses a different sequence of sorting criteria:

1. Sonneborn-Berger
2. Buchholz score (computed as player's score times Buchholz)
3. Buchholz
4. Median score (computed as player's score times Median)
5. Median
6. Rating

The introduction of Buchholz and Median scores yields pairings that differ from the expected ones each time the order given by the Buchholz (or Median) score will be different from that given by the Buchholz (Median) itself.

FLOATERS MANAGEMENT

Some problems intrinsic to the management of floaters by the Burstein system were mentioned above (see "Floaters management"). Here, we shall rely on the customary significance of this term. However, we need to point out a few issues that seem to relate to the implementation and not to the system.

The first is that a floater in a bracket, who should be protected by article 6.3 (and by common sense!) against unnecessarily floating again during that same pairing, may actually be floated down again by the software when two scoregroups are collapsed.

> ***C.04.4.2.6 Pairing procedures:***
>
> ***6.3*** *If there is an uneven number of players in the SG, the same procedure is followed and the remaining player is floated to the next SG (provided he is not a floater from another SG) and is paired within this SG according to the same procedure.*

For example, consider the scoregroup {1, 3}, where players #1 and #3 did already meet in a previous round. The scoregroup is then collapsed with the following {2, 4, 5} (where the above numbers refer to the order of players in the collapsed bracket). Now, if the pairing [1-5, 2-3, 4v] is possible, it should definitely have priority over [1-5, 2-4, 3v]. On the contrary, the software would prefer the latter to the former, possibly making an (unnecessary) "re-floater" out of #3.

A second issue relates to the pairing inside the score bracket, when the latter contains players with different scores. In compliance with both the general Swiss rules and the principles of the Burstein system (see above, "Score difference management"), all the possible pairs between players with the same score should be built. However, the software does not enforce this principle, and we may have more differences than are strictly unavoidable.

For example, consider a (collapsed) score bracket in which players {1, 4, 6, 7} have a higher score (say, half point more) than players {2, 3, 5, 8} (where, as before, numbers refer to the order in the collapsed bracket). We should expect that, if the pairs 1-4 and 5-8 are legal, the pairing will be 1-4, 2-7, 3-6, 5-8 – whilst the software may yield the "standard" pairing 1-8, 2-7, 3-6, 4-5.

"PAIRING ALLOCATED BYE" ALLOCATION

Burstein system's rule 4.1 seemingly limits the allocation of a bye to players who did not previously get one or more point without playing.

> ***C.04.4.2.4 Odd number of players at the tournament:***
>
> ***4.1** A player who has already received a point without playing shall not receive a pairing-allocated bye.*

As we already noted (see above, "Byes management"), there are some doubts about the actual scope of this rule and its application in the case of half (or even full) point byes.

However, Vega does not strictly comply with this rule – actually, it may assign pairing allocated byes to players who have already received "full point byes", or multiple "half point byes" in the traditional scoring system, or "half point byes" in scoring systems where the "half point bye" is worth one point.

CONCLUSIONS

In view of all the above considerations, the sub-committee believes that the completion of an endorsement procedure for the system is not possible for the time being, and that a preliminary rewording of the system rules is in order, to remove all the system ambiguities.

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