

SORIN-18 System of Volleyball Scoring

0. About the author

I, Sorin Roman, previously submitted this proposal to several volleyball people (mostly coaches), and some of them appreciated the novelty and some of them felt reluctant, simply because they knew nothing about the author. I thought some presentation is necessary.

I am an analyst by profession (a Computer & Automation university graduate), a long time volleyball fan, a former volleyball referee (low level), and for 3 years I've been a volleyball journalist (national coverage).

I've been seeing volleyball mostly through the eyes of the spectator, but also tried to understand the coaches' and the players' standpoints. I've seen that volleyball is slowly degrading as a show, becoming unacceptably simplistic and spoiled by a lot of visual of time problems. Particularly, the top-level men's volleyball has become a simple serving contest... some inexperienced viewers may wonder why are 12 players necessary for that?

The result is a terrifying decay in the number of spectators (despite some unrealistic claims!). For example, the final of the World Club Championship 2017 (M) (Cracow) had **5600** audience, and the final of the World Club Championship 2017 (W) (Kobe) had only **1000**! Only my pathetic local football team brings easily 6000 spectators together at a game. That happened in countries where volleyball is "very popular" and with that large display of huge volleyball stars. The **62,000** spectators record (Poland 2014), which impresses some volleyball people, is "broken" each week on tens of football European stadiums... In most European countries, the average game audience in their national first divisions is around **200**!

The present situation of volleyball is a concern, and that has been confirmed by some naïve attempts to correct the regulation in the past years. Unfortunately, the effects have been unimpressive.

Therefore, I thought I could help modern volleyball and use my professional analytical skills to bring some reform ideas. I've been working on these suggestions for a while and adjusted them after I collected some preliminary feedback.

Important: Even if it isn't explained in detail, almost each element of this new design has a justification. These are not just random ideas!

1. WHY A NEW SCORING SYSTEM?

In recent years there have been some attempts to change the volleyball scoring system. The present system leads to many games that are too short or too long. At the same time that duration unpredictability seems to be a cause of annoyance for the sports TV channels.

In a simplified manner, if we accept that a 25-point set ends in about 25 minutes, we can say that there is approximately one point advance for one minute (ignoring the timeouts). Thus a game using the current system will last between roughly **75–115 minutes** (equals 1h15–1h55), without the breaks between sets and not considering the sets longer than 25 points.

Considering the breaks and the fact that in reality some sets are shorter and some are longer, the margins of durations go to roughly **75–145 minutes** (equals 1h15–2h25). We can understand why TVs aren't happy.

The system tested in 2017, **4 sets out of 7** (and each set of 15 points), is mathematically nonsensical, because it brings changes that hardly count.

With the same calculation:

- the duration of a game not considering the breaks between sets is **60–105 minutes** (equals 1h00–1h45),
- the duration considering the breaks and the set variations is **70–130 minutes** (equals 1h10–2h10).

While the maximum duration is statistically 10-minute shorter than the currently regulated system, the high degree of unpredictability remains.

| Score systems | Game duration ignoring the breaks and longer sets (minutes) | Game duration with the breaks and wider set margins (minutes) | Margin of unpredictability (minutes) |
|-----------------|---|---|--------------------------------------|
| 3 sets out of 5 | 75–115 | 75–145 | 70 |
| 4 sets out of 7 | 60–105 | 70–130 | 60 |

To design a system that can lead to a more predictable duration, **timing** has to be involved.

Another reason to abandon the current system is that a set is compromised when the score difference is considerable. When the score is 19–10, it is very unlikely that the trailing team will ever win the set, so both teams play formally, unenergetically, just to reach the legal 25th point.

2. THE NEW SCORING SYSTEM

With this new scoring system, a game is supposed to last around **90 minutes** (actually just a little longer, in most cases).

A game consists of **2 PARTS**. We can't call them "HALVES" like in football, because they are not really equal.

PART 1 is supposed to last about **40 minutes** (normally a little longer).

A break of **10 minutes** follows.

PART 2 is supposed to last about **40 minutes** (frequently a little shorter).

Each PART is made of **4–5 SETS**, their number is slightly unpredictable.

Each SET mostly follows the scoring rules of the current 15/25-point sets, but it ends exactly at **10**, so with no necessary minimum difference of 2 points.

There is **only one regular 30-second timeout** during each SET, and either team may call it. (It doesn't mean that each team may have one timeout, but there is only one timeout allowed inside one SET. Whichever team need it first, call it.)

There is **no technical timeout**. Between two SETS there is a 1-minute break, which may be used for commercials (thus replacing the "technical timeouts").

Inside one PART, the teams **do not change courts**.

At the beginning of the game a timer is set for **90 minutes**. At **40 minutes** into the match, it is most likely that a SET is in progress. A sound signal marks the 40 minutes, but the SET continues, the game is not interrupted yet. When that SET ends naturally at 10, then PART 1 ends.

From the referee's last whistle of PART 1 a **10-minute** break of is counted, while still the 90-minute timer is ticking. The referee makes sure the teams are ready for PART 2 when the 10 minutes have passed. Small delays may be tolerated, since the games ends when the last SET ends, so 1 minute or so is not a problem.

For PART 2 the teams **change courts** and the game continues in the same manner as PART 1.

At **90 minutes** into the game the timer will produce a new sound signal and from that moment the current SET must be concluded according to the rules, to point 10, and the game is over.

It is most likely that sound signals occur during a SET. If either PART-ending signal occurs during the 1-minute break between 2 SETS, one more SET must be played to conclude that PART [*this is debatable*].

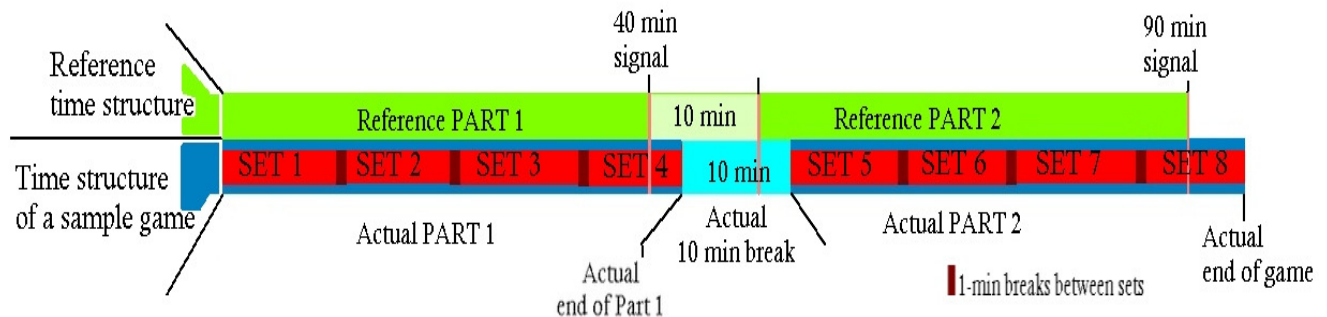


Figure 1. A game time chart

The timer should be stopped if lengthy/special situations occur: injuries, blackout, audience riot, cataclysm..., and then resumed if possible and reasonable.

As a result, the duration of a game is more predictable, meaning between **95–100 minutes**.

3. A NEW RANKINGS SYSTEM

The ranking system has to change as well.

Some of the analyzed ranking variants showed that 2 teams can cheat by either:

- forcing too many sets or
- forcing too few sets or
- lagging after securing the victory.

One good ranking variant to cancel such problems is this one inspired by the game of scrabble:

The winner gets 1 point plus the ratio between the sets they won and the total number of sets.

Then the number is rounded up/down to one decimal figure.

Then this is multiplied by 10 for comfort.

The loser gets 0 points plus the ratio between the sets they won and the total number of sets.

Then the number is rounded up/down to one decimal figure.

Then this is multiplied by 10 for comfort.

Thus the winner can get between **15–20 ranking points** per game and the loser can get between **0–5 ranking points** per game.

This way the set difference counts too, and the teams are interested in playing seriously to the end of the game time.

The ranking points of one game are **20** in total (adding up what each team may get).

In the situation of a **draw**, each team gets **10 ranking points**.

In the situation of one team **not being present or able to play**, it gets **0 ranking points** and the other team gets a default **18 ranking points**.

*Examples (suppose **Team A** wins):*

| The Score | | Team A ranking points (and points divided by 6) | Team B ranking points (and points divided by 6) |
|-----------|--------|--|--|
| Team A | Team B | | |
| 6 | 3 | 17 (2.8) | 3 (0.6) |
| 9 | 1 | 19 (3.2) | 1 (0.2) |
| 5 | 4 | 16 (2.6) | 4 (0.7) |
| 7 | 1 | 19 (3.1) | 1 (0.2) |
| 8 | 0 | 20 (3.3) | 0 (0) |
| 5 | 2 | 17 (2.9) | 3 (0.5) |
| 4 | 4 | (a draw) 10 (1.7) | 10 (1.7) |

Although the ranking points are now in a bigger number, this new ranking system is not very far from the current system. If we divide the points by 6, we get close to the current ranking points. The complexity of this calculation is meant to motivate the teams to fight. Even the losing team will fight to diminish the damage, because each set they win might bring them 1 more ranking point or so.

This ranking system includes the effects of both the victory number and the set ratio.

The second ranking criterion will be the **number of won sets of the last 3 sets** of the games.

Example:

Consider this score evolution in a game:

2–0

2–1

4–1

4–3

4–4

5–4

For this game, the ranking lines will look like this:

Team A: 16 points, WL3S: 1

Team B: 4 points, WL3S: 2

WL3S = Won of the Last 3 Sets

Even if this second criterion seems complicated, there are modern ways to do the math automatically. In addition, it is another way to stimulate a good play at the end of a game.

The third ranking criterion could be the **game-point ratio**.

4. OTHER ADVANTAGES

Scores with big differences are less likely to appear within a set.

The absence of the minim 2-point difference prevents **time dragging** and so it severely lowers the unpredictability of a set duration.

The dynamics of the game will change since there will be no more lingering of either team before point 16 (like in the current system). So will change the thrill of watching the game.

Enough time is available for **TV advertizing**.

5. OTHER NECESSARY RULE CHANGES

SERVES

Each team is allowed **2 serves in a row**, no matter who wins the previous rally. This has been proved useful in table tennis.

8-SECOND SERVE RULE

8 seconds allowed for a service are too long. The rule of **8 seconds from the previous rally end** (the way it was at the Rio Olympics) is reasonable and that limits the time for endless hugs.

(Actually, the hugging itself should be forbidden, as it has become a pest: they hug 200 times in a 5-set game! That is pathetic. This is one of the most annoying displays in today's volleyball.)

SUBSTITUTIONS

Only the same maximum of **6 substitutions** per team are allowed in each PART.

Only a maximum of **2 substitutions** per team are allowed within each SET.

As in today's rules, one substituted player can only come back onto the same position in rotation.

Special situations (injury etc) should be treated according to the current rules.

Rationale: In the current play system, where a 25-point set may be approximated to 25 minutes, we can say that one team is allowed to make one substitution at an average of about 4 minutes. If the ratio is maintained in the new system, in one PART of about 40 minutes, about 10 substitutions would fit. Keeping this lower number of 6 substitution per PART means less time wasted with substitutions and a smaller impact on the new score sheet.

ROTATION

The basic relative placement of each team's players (the rotation structure) is set at the beginning of each PART and that remains unchanged during that whole PART. As in today's rules, the team rotate one position each time they receive the service.

A NEW ATTACK LINE

It is silly and against nature to oblige a second-row player to land *behind* the attack line, as new suggestions have appeared. It is true that the spikes from the second row have become as "lethal" as the first-row spikes, but that is valid only for the men's volleyball. The women's volleyball is fine as it is. To temper the men's volleyball, a new supplementary attack line is necessary on the court, probably **4 meters** away from the net.

Multiple lines (for different situations) may exist on a court, like in tennis. See the diagram.

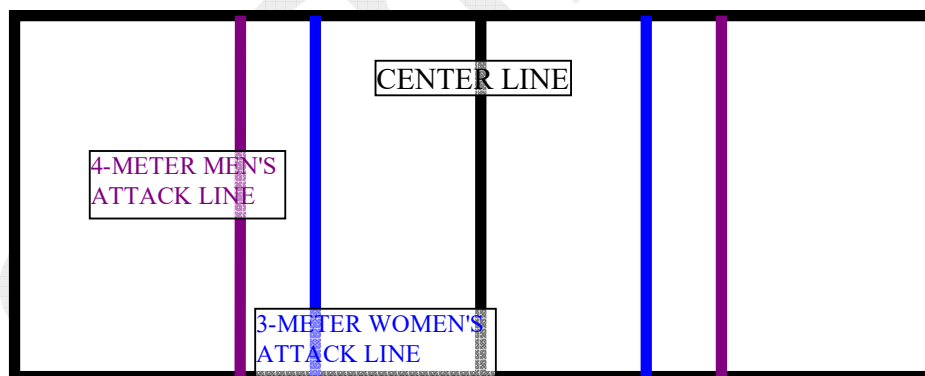


Figure 2. A court layout with 2x2 attack lines

VIDEO CHECK

Where the video check is approved and available, each team will be allowed only **1 challenge per set**, which is renewed if the challenge is successful.

Also, the referee himself/herself is allowed to use the system whenever he/she considers it necessary.

The video check system must be included in the official "Refereeing Rules" as it influences the game directly.

The video check should not be available in the first 3 sets to prevent delays of game [*this is debatable*].

SCORE SHEET

A new design of the score sheet is needed.

6. ADDITIONAL CORRECTIONS AND SUGGESTIONS

Some coaches would like the substitution rules to be totally relaxed. However that would annihilate the idea of rotation.

Ways should be found to reduce the referees' whistling. This current continuous whistling is unreasonable.

JERSEY NUMBERS

The current regulation allows jersey numbers up to **20**. However, even in the international games this rule was broken, as it has been proved this limitation is silly. Players should be allowed to wear any (integer) number between **1–99**.

7. CRITICISM

Like any change, this may raise a lot of criticism. Some people like the old ways simply because they are accustomed to them and it is very hard for them to adapt. That is valid even for the greatest coaches, as their long-time tested ways are under menace. That is why their assessment/reply to ANY rule change will almost always be negative. ANY new system makes them uncomfortable. The same goes for top players. But it is all for the greater good of volleyball, certain changes must be imposed, against their comfort.

Other people would say that some fundamentals of the spirit of volleyball are affected.

The point is this: modern volleyball has squeezed almost all from its show potential. In most part, it has become too simple to play and too simple to watch, therefore **boring** for new spectators. The thrill of the show is weakening and this sport is going to die, if it is not revamped urgently. New ways to make the game more spectacular have to be found.

This new scoring system (with the addition changes to the structure of the game) is supposed to make each set more thrilling and to eliminate much of the lagging, so volleyball can survive.

Future rule changes will require that this scoring system changes as well. Now we can approximate that a 10-point set is likely to last for 10 minutes. However, changing the ball (dimension, weight), the field, the number of players, the net height etc, might lead to longer more spectacular rallies (hopefully). Then a 10-point set will last longer, therefore some sort of readjustment will be needed. Any improving suggestions are welcomed, as long as they don't destroy the basic ideas.

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