

NEW TECHNOLOGIES APPLIED TO ARBITRATION VOLLEYBALL



Mario Bernaola Sánchez International Referee from Spain

It is time for us to forget those past times when referees used to dress in white and the scorer used a simple pen and paper scoresheet, where he wrote down everything that happened during the game.

Today, international refereeing has implemented a great deal of technological progress, so many of them that a beginner referee would not possess enough knowledge only by studying the rules and regulation.

We have from the electronic scoresheet, to the Hawk eye, as well as different types monitoring TV to the ball and the ground, based on a set of TV cameras. Electronic innovations have been one of the main factors that have encouraged our sport to attract the viewer or spectators, and to engage them to become our fans and supporters, as well as to attract new followers.

Referees must take advantage of new technologies, we must apply them to our refereeing or simply learn from other sports how these technologies are applied in order to complement and to enrich the art of refereeing.

What could be a better support to the referee than to take advantage of the new technologies to avoid mistakes and to go unnoticed during the game, this is the dream of any referee, "nobody knows who led the match, as if no one had performed ... "this could be the definition of our match" TEN".

These refereeing errors to which I refer to can be committed by anyone, since the human eye is not able to control the still image of a ball that can potentially reach a speed of 110 km / h, touching the ground near the lines. We are not machines, however a TV camera can analyze such situations, or perhaps a simple contact of the ball with the line, it could indicate IN or OUT, being treated as a translation of an electronic contact.

Today, in high-level competitions, the use such features and improvements are starting to be employed, especially those based on the combination of images of TV systems.

We have also patented a sports hall where there are no lines of play, designed with an LED lighting system that generates the game lines of a track according to the sport that is being played. It is a multidisciplinary field whose lines match light differently depending on the game that takes place. The boundary lines of the pitch and its different parts are "painted" with LED chips, whose settings can be adjusted from a control computer to create a field or another.

Why not using this system, by means of contact resistances indicating whether lines touch the ball or not? Time to time, we are living a present with a progressive technological future.

This same theory could be applied to the top of the net, to hand contact, either infrared or through electronic resistors, heat sensitive. This may sound like science fiction but I'm sure that

scientists could help to such services through new techniques, applied to our sport.

Therefore, from now on I will talk about the technological means that can help us referees, to make our job easier.

Let's start with the electronic scoresheet, already established in the top competition initiated by the CEV and sustained by the FIVB, the electronic record is an almost exact replica to the paper scoresheet, handwritten by pen, a system that could be introduced in a more basic and simple way to regional and youth competitions, through an app uploaded to an app Tablet to facilitate and improve the work of the Regional Federations, avoiding, thus, the use of paper, results management, testing and registration of players accepted database for central management of competition above mentioned, and, beyond a shadow of doubt, a lot of other improvements.





Moreover, we could talk about communication among referees; we all know it is easier to interpret a spoken piece of information rather than a misleading body signal made by the hand, easily misinterpreted. This could be avoided by providing an intercom, as spies do, allowing thus a perfect understanding. We know that, like in other sports, this system is starting to be used in our sports and is beginning to gain acceptance in high competitions

Another feature that we could have at hand is that of having vision at all times of the positions of the players, something high-level coaches possess nowadays. They usually have up to three tablets on their chair, with the vision of the game with a three or four seconds delay to see a repetition of the conclusion of the final play, and two other tablets to control the scouting of their own team and the opponent.

Based on the same system, it would be easy to repeat the information of the team positions, via Wi-Fi, from the tablet of origin, where you are controlling the official match report. This small-sized Tablet (5 to 7 inches), could be placed hidden in any of the posts so as not to cause any disturbance or be a danger for the match, assisting the first or second referee.

Thus, as I have previously pointed out when referring to the system of electronic contact with the ground lines, this signal could be seen reflected in a red light placed in the post by the first referee, to supplement visual aid.

The time we are living is witnessing the birth of new technologies and we must make our best in order to apply them to our sport, to make our life easier, so that they can amend errors before they occur. Referees are human and we were born to make mistakes, but the fewer we make, the better.

Now after these simple approaches, I wonder if in the future, referees shall still be necessary or not. Just a quick reminder on how during the industrial revolution the machine almost replaced the man. I hope



this does not happen to us and does not keep us away from our passion, "volleyball", because I have always thought that we are a necessary evil, but still "necessary".

