ITF CHARTING SYSTEMS

Manual

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FOREWORD

Improvement in tennis is fast when proper feedback is provided at an appropriate time. Feedback after matches will help players to know their weaknesses, strengths and their limitations in a match situation, which will lead to overall development of their game.

Good feedback can only be given when proper analysis has been done. For analysis or evaluation of the match, match has to be recorded on paper. This recording of matches on paper in respect to the points to be observed is called ‘Charting’. For observation of different aspects and according to the particular need different charting systems can be used for a player. It is up to the coach to decide what he wants to observe and record and to decide which charting system is most suited for the particular purpose. All the charting systems have their own advantages and disadvantages.

Charting has a useful educational and planning value, if properly charted and with a proper feedback it will contribute a lot towards the players development.

Coaches can create their own charting systems for the players need:

Guidelines for a good charting system:

- Standard codes should be used, for people to understand and use.
- Charting system should be easy and understandable to a non-tennis expert, as charting will be done by parents, fellow players and not necessary every time by a coach.
- Comments column should be provided in all the systems, as they compliment the charting process and help in the analysis for the conclusion of a proper feedback.

FEEDBACK: Use both the charting and the comments to give feedback, which need not only be when player loses but also when the player wins.

Suggestions:

- Feedback should be simple, specific and clear.
- Feedback is a discussion in a relaxed situation.
- Listen to the player before you give feedback.
- Touch on two aspects at the most, when it comes to correction.
- Suggestions must be in acceptable easy progressions.
- Feedback should be given before the memory fades but if the player is not receptive, postpone the feedback session.
MATCH – ANALYSIS SCORE CARD CHARTING SYSTEM-
By George Paldano- Sri Lanka

The purpose of charting is to give a “feedback” to the player and to the coach for further development or towards better game. This is the reason behind the charting exercise. To achieve this, “charting” should be accompanied by “comments”. Using the chart and comments, an analysis should be done. Analysis should lead to a simple feedback. It is good, all to be done by one person. Analysis and feedback are better to be done on the same day, before memory fades.

The reason behind using Tennis scorecard was to induce the game concept and something familiar to many tennis players. Originally developed when I was in Germany, in the 1980’s. Since then it has gone through many changes and what is seen here is the version of 2002. I always based analysis on the game. My years as a competitive player have instilled this base in me. Of all the systems I had to use for analysis, this was the most useful and easy to me, as a coach. I have listed the advantages and disadvantages. This is seen from the angle of the coach. Today there are many charting systems.

Useful Guidelines for charting

• As Charting demands an interpretation of the game. It has to be done by someone who has a good knowledge of the game. If it is to be done by a parent or non-tennis expert, please be specific. By being specific it would be made meaningful, even in the hands of a non-expert. Charting, if done correctly, it is an extremely useful tool.
• The Chart can be used in more than one way. It is important to be SPECIFIC to have effective results. General use would yield players playing pattern.
• I strongly advise not to comment on each shot and rally. This habit makes the charter very emotional and charting worthless. We need objective record where it can be used for coaching and as a good guide for the next match. [I have read comments such as ‘Fool’ and ‘stupid’ they are worthless]

Advantages

It appears to be the same as the Tennis Umpire’s scorecard. Little changes are incorporated to make charting and to extraction of information easy.
• Shaded lines will show how player won points and white lines, how player lost the points.
• The squares are marked as in the ‘score-card’. That is, order in which the points were won will be on record for every game.
• As in a scorecard the game score is easy to read. It appears at the extreme right columns.
• Codes will show errors and winners, pin pointing the stroke played. After the match, they can be counted for analysis using colored marker.
• Server’s name is shown in the service column.
• Detail of the match are shown at the top of the card.
• Charter’s name is written down on for every set. It possible some matches are charted by more than one person.
• Codes could be changed to suit the individual. It will not change the effectiveness of the system. Keep it simple.
• This will reveal the game approach of the player. Chart and comments will give a complete picture of the game.
• Once you get down to doing it you find it to be very simple and squares are large enough to write.

Disadvantages

I am yet to see a perfect Chart. So this too has its shortcomings.
• Most of the commentators need does not come out easily.
• Uses little more space than some other charts.
• Comments will be based on charters view on tennis. This is inevitable.
You are bound to see more. Whenever I felt or heard a disadvantage, I upgraded it. If you find any please E-mail me. I will be very grateful.

About the chart and codes of Charting

• Standard codes are recommended for charting, as many people can use and understand it.
• Use combination of codes to explain- e.g. Short Forehand Winner – SFW
• Each game has been allocated two lines in this system of charting. -If the number of rallies in the game extends use the next two lines. As it is done in the scorecard.
• Use the boxes as in the use of umpire’s ‘score card’. This way they will reveal the way the game was won or lost. [Get a umpire friend to explain].
• The players who is been watched will have his winnings on the top shaded line.
• Whenever the player loses a point, it will appear on the bottom clear line. Making it easy to analyse
• The number in the front of the code in the example shown below is the serve with which the rally was played. [Example – 2 BOW- LR—Rally was played with 2nd serve and point was won with backhand crosscourt winner after a long rally.]
• Codes could be changed to suit the individual. By adding, deleting or changing Codes. It will not change the effectiveness of the system.
• If you make a mistake, use an X to fill the box and use the next box.

Charting codes

-W- winner     E- error     1- 1st Serve     2- 2nd Serve
-D- Double fault R- return F- fore hand B- Backhand
-DR- Drop Shot L-Lob C- cross court O – over head
-DL– Down the line V- Volley UE- unforced Error
-LR- Long Rally S- short M- mid court A- ACE
ITF Level III Coaching Course – Tactics Module – Match Charting Systems

-P- passing shot

Develop your own codes for the need of your player. Please keep it simple. It is the only way to keep it easy, fast and above all effective. Changing codes will not change the system.

Use of the Comments column

The purpose of this to compliment the charting process, so that the analysis will be game based. Observe following game factors, and base your comments on them. Here are some guidelines.

1- The 5 Game situation. 2- Is player “acting” which is good or “reacting”. 3- Opponents strength/ and weakness. 4- Big points awareness. 5- Working for early lead in games and set. 6- Effective shot selection., 7- Effectiveness in service and return and the third shot. 8- Positioning. 9- Risk taking. 10- Moving on the court. --and others.

Basically how he played the game. Please note down STRENGTH AND WEAKNES. Comments will have to reveal the attitude of he player, physical condition and his mental approach to the game. This complimentary information is vital for analysis and feedback.

When commenting, do not use Abbreviations. Later, when you read it will have to be easy to read and understand. As you are bound to write this between games, there will be some time. Please keep this very short- Please do not repeat what has been charted. This should compliment the chart for analysis. I am repeating this aspect as it a common error of charting. When you read the Analysis. This would give an idea what type of comments is needed to do a useful analysis. Use the “game number” in front of the comment. Example –3, 4,5 shots fell mid court. – This means in the 3rd 4th & 5th game, shots fell in the mid court.

Analysis

The Chart and the Comments should give you easy analysis. PLEASE TAKE TIME OVER THIS. Your feedback is will depend on this. There could be many type of analysis.

Stroke analysis – Good to do one for each set. This reveals physical condition. Most of the players use less than 6 strokes 90% of the time to establish a game. Develop an analysis chart such as the simple one below to show their efficiency.

<table>
<thead>
<tr>
<th>Strokes</th>
<th>Winners</th>
<th>Forced Errors</th>
<th>Unforced errors</th>
<th>Technical</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Serve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd serve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forehand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OTHERS

2-Game analysis

3-Physical side

4-Mental side

5-Routines

6-Specifics

7-Your other requirements.

Feed back

Feedback is not only when the player looses. It is also when the player wins. If done only after losses, it would have a negative connotation. Feedback is the whole purpose of Charting. Golden rule is keeping it simple, specific and clear. Good feed back is a DISCUSSION. Not a monologue. Get the player to talk. This helps him to think. Do take care on the choice of words. Children do not understand big and unusual word. Keep it in every day language. Ask question to make sure to check if player has understood. Feedback must be done when the player is receptive and relaxed. It is better to suggest than to force them. Keep them in the comfort zone. It if they resist please drop it. Have a good discussion under relaxed situation individually. Please take presentation very seriously. Better after dinner than before. – Negotiate when stomach is full-Chinese Method. Coach must have it in writing to be referred before coaching sessions. A pre-set format may help to be consistent. If the coach finds the analysis good enough he could use it for feedback. A presentation system is a good idea. This help to be comprehensive. Feed back session must not last more than 30 minutes.

No player is complete and every one can improve. Even if have won Wimbledon two hours ago. Identify where the player can achieve most and go for it. Make sure the “progressions” are easy to achieve. This success will make him eager to accept other changes too if they achieve success in changes. General overview is a good idea. Working aspects at time for the player cannot exceed two. Coach may note down all. To be specific and progressive is important for success.

Finally few suggestions:

1 Listen to the player before you talk.
2 Make sure feedback is a discussion.
3 Suggestions must be in acceptable easy progression.
4 Ask questions- Make the player to think.
5 Touch on two aspects the most, when it comes to correction.
Pay attention to the mood of the player during review. If his mood not Receptive, tactfully abort.

<table>
<thead>
<tr>
<th>Feed back aspects</th>
<th>Observations and rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Players view</td>
<td></td>
</tr>
<tr>
<td>2- Players rating</td>
<td></td>
</tr>
<tr>
<td>3- Coaches rating</td>
<td></td>
</tr>
<tr>
<td>4- Stroke</td>
<td></td>
</tr>
<tr>
<td>5- Game</td>
<td></td>
</tr>
<tr>
<td>6- Mental</td>
<td></td>
</tr>
<tr>
<td>7- Physical</td>
<td></td>
</tr>
<tr>
<td>8- Routines</td>
<td></td>
</tr>
<tr>
<td>9- Specifics</td>
<td></td>
</tr>
<tr>
<td>10- Others</td>
<td></td>
</tr>
</tbody>
</table>

Work Suggestion 1

Work suggestion 2

Charting is a useful educational and planning value, if well and compete it will contribute a lot towards the player development.
**G- AN EXAMPLE**

MATCH CHARTING--- SCORE CARD SYSTEM--DATE 16 March 92

TOURNAMENT – Essen – Championships VENUE - Essen [indoor] Germany

**PLAYERS:** Katya  **Vs**  Judith

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>Charted by-- George Paldano</th>
<th>K</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Ju</td>
<td>BV</td>
<td>1</td>
<td>W</td>
</tr>
<tr>
<td></td>
<td>2 F-C</td>
<td>2</td>
<td>FRC</td>
</tr>
<tr>
<td></td>
<td>1 FP-LR</td>
<td>1</td>
<td>BE</td>
</tr>
</tbody>
</table>

| 2 Ka    | 2FCW-LR                    | 1 | BDR |
|         | 2 | BE |

| 3 Ju    | 2BDR-LR                    | 1 | BRE |
|         | 1 | A |
|         | 2 | OW |

| 4 Ka    | 2BDL-E                     | 1 | OW |
|         | 2 | BUE |

| 5 Ju    | 1BC-LR                     | 1 | MBC |
|         | 1 | FCW |
|         | 2 | MFW |

| 6 Ka    | 1 W                        | 2 | BCE |
|         | 1 | BCE |
|         | 2 | BCE |

| 7 Ju    | 2 BCE                      | 1 | FRW |
|         | 2 | FRW |
|         | 1 | FRW |

| 8 Ka    | 1 BCE                      | 2 | FRCW |
|         | 1 | FDLE |
|         | 1 | BCE |

| 9       |                            |   |   |

| 10      |                            |   |   |

| 11      |                            |   |   |

| 12      |                            |   |   |

| TIE BREAK |                            |   |   |
| TIE BREAK |                            |   |   |

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NB- I have made 9,10,11,12 and tie break smaller to put into one page. In the next page they all appear same.

**COMMENTS __JUDITH ---** Slow start in every game. Most of the time opponent took the vital 30 or 30 –15 lead in the game. --Many back hand errors due to risky target selection—No real advantage from service. -- game plan. Little signs of it - Check on warm up, played the first two game well below her average.- George

George Paldano - April 2002- Colombo—Sri Lanka
MATCH CHARTING - SCORE CARD SYSTEM -- DATE
TOURNAMENT –
PLAYERS:

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>Charted by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TIE</td>
<td>BREAK</td>
</tr>
<tr>
<td>TIE</td>
<td>BREAK</td>
</tr>
</tbody>
</table>

COMMENTS FOR THE SET

© GEORGE PALDANO-SRI LANKA - E-MAIL - paldanog@sltnet.lk
BASKET BALL CHARTING SYSTEM

Advantages of Basketball charting system:

1) It shows three significant areas of importance:
   - The part of the court the shot was tried from.
   - The shot that was missed.
   - Where the shot was missed.

2) Tallies can be kept of winner’s double-faults and other shots.

Disadvantages of Basketball charting system:

1) It is an error detection system, and it does not show winners that are hit by your player or the opponent.
   - While hitting, which shot i.e. cross-court, or down the line, the mistake has occurred.
   - Differentiation in strokes, approach, return is not there.
   - Errors in special shots cannot be shown.
   - Service %age is not shown.
Basketball shot
tennis charting
system -

KEY

Players position & stroke used –

B = Backhand
F = Forehand
V = Volley
S = Serve

Where an error was made –

• = Where error was made; for example:
  B = backhand in net
  •
  F• = Forehand wide to the right
  •V = Volley wide to the left
  •
  S = Double fault long

Forced Errors:

O = Forced Error; for example
  (F) = Forced error on forehand side

TALLY FOR SET –

<table>
<thead>
<tr>
<th>Player 1</th>
<th></th>
<th>Player 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Winners ______ vs. Errors ______</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double Faults ______</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service winners or forced errors ______</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winners ( ) – Errors ( ) = ______</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ITF Level III Coaching Course – Tactics Module – Match Charting Systems
Basketball shot tennis charting system -

**KEY**

Players position & stroke used –

B = Backhand
F = Forehand
V = Volley
S = Serve

Where an error was made –

• = Where error was made; for example:
  B = backhand in net
  F = Forehand wide to the right
  V = Volley wide to the left
  S = Double fault long

Forced Errors:

O = Forced Error; for example
(F) = Forced error on forehand side

**TALLY FOR SET –**

Abhishek T. (Player 1)
Winners 12 vs. Errors 15
Double Faults

---
HEMANT BENDREY CHARTING SYSTEM

GUIDELINES FOR PLAYER ANALYSIS CHART

✓ represents an error or a winner.

☐ represents unforced error.

FC ✓ represents an error while hitting cross-court, with the ball going long.

BD ✓ represents an error while hitting backhand down-the-line with the ball going in the net.

FAD ✓ represents an error while hitting a forehand approach down-the-line with the ball going outside the concerned side-line.

□ represents the service box. Dot on the far side represents a first serve going on forehand.

◿ represents first serve attempted on the forehand going in the net and second serve on the backhand.

◿ represents first serve attempted on the forehand going long and second serve attempted on the forehand going in the net.

◿ - FC this is a crucial point box, crucial points can be decided by the person charting but can be 15-30, 30-15 40-40, 40-A etc...; this box represents first serve on the backhand going long, second serve on the forehand and a forehand cross-court error on a crucial point.
Advantages of Hemant Bendrey Charting System:

- Winners, errors and forced errors of both the players are shown.
- The specific stroke used to win or lose point is shown.
- Winners, errors and forced errors can be detected of each game.
- Service %age and number of double faults of both the players can be found out.
- While hitting which shot the error occurred or winner was made (down the line or cross-court) is shown.

Disadvantages of Hemant Bendrey Charting System:

- It does not show the part of the court the shot was attempted.
- It does not show where the shot was missed (in the net, long or at the sides).
Advantages of ITF Match Charting System:

- Winners and errors of both the players are shown.
- The stroke used to win or lose point.
- Winners and errors can be detected of each point.
- Service %age and the number of double faults can be found out.

Disadvantages of ITF Match Charting System:

- Forced errors of both the players are not shown.
- It does not show where the shot was missed (in the net, long or on the side).
- It does not show the part of the court the shot was attempted.
- It does not show while hitting which shot the error occurred (down the line or cross-court).
This system is developed by Paul Scarpa, the tennis coach at Furman University, Scarpa determined that in average play, a player’s game points were usually made by:

1) Hitting one winner
2) Making an unforced error.
3) Forcing one error from the opponent.
4) Accepting one error from the opponent.

Advantages of Paul Scarpa Charting System:

- This system shows winners and errors of both the players.
- Unforced errors of both the players.
- The stroke use to win or lose the point.
- Winners, errors and forced errors can be detected of each game.
- It shows the running score.

Disadvantages of Paul Scarpa Charting System:

- Service %age cannot be shown.
- It does not show the part of the court the shot was attempted.
- It does not show where the shot was missed (In the net, long or on the side).
- It does not show while hitting which shot the error occurred (down the line or cross court).
MATCH CHARTING SHEET

Player: ____________________________ v/ Player: ___________________________ Date: __________

Surface: __________________________ Conditions: ________________________________

Key:
- ✓ = won
- x = Lost
- 1 = First serve
- S = Serve
- D = Double fault
- 2 = 2nd serve
- F = Forehand
- B = Backhand
- T = Rally length
- V = Volley
- DS = Dropshot
- SM = Smash
- I = Own player
- O = Opponent

<table>
<thead>
<tr>
<th>OWN PLAYER</th>
<th>OPPONENT</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>F</td>
<td>B</td>
</tr>
</tbody>
</table>
GENERAL ANALYSIS OF THE STATISTICS

<table>
<thead>
<tr>
<th>OWN PLAYER</th>
<th>OPPONENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Serve</td>
<td>1st Serve</td>
</tr>
<tr>
<td>2nd Serve</td>
<td>2nd Serve</td>
</tr>
<tr>
<td>Double fault</td>
<td>Double fault</td>
</tr>
<tr>
<td>% 1st serv.</td>
<td>% 1st serv.</td>
</tr>
<tr>
<td>Winners</td>
<td>Winners</td>
</tr>
<tr>
<td>Errors</td>
<td>Errors</td>
</tr>
<tr>
<td>Total</td>
<td>Total</td>
</tr>
</tbody>
</table>

Forehand: Forehand
Backhand: Backhand
Volley: Volley
Smash: Smash
Drop shot: Drop shot

RESULT

First set: Second set: Third set:

DURATION

First set: Second set: Third set:

GENERAL COMMENTS

Technique

Tactics

Mentality

Physical C.

Summary
PERFORMANCE MATCH SHEET
(TO BE FILLED IN BY THE PLAYER)

Name of the player ________________________________________________

Date: ______________. Conditions: ____________________________________

Event: ___________________. Surface: __________________

Round: ___. Opponent: _____________________________________________

<table>
<thead>
<tr>
<th>Performance goals set before the match</th>
<th>Degree in which they were achieved (1-10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>/10</td>
</tr>
<tr>
<td>2.</td>
<td>/10</td>
</tr>
<tr>
<td>3.</td>
<td>/10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance tips before the match</th>
<th>Degree in which they were achieved (1-10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>/10</td>
</tr>
<tr>
<td>2.</td>
<td>/10</td>
</tr>
<tr>
<td>3.</td>
<td>/10</td>
</tr>
</tbody>
</table>

Match Result: _________________________________________________

Game style of the opponent: __________________________________

<table>
<thead>
<tr>
<th>Personal score effort and fight</th>
<th>/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal score satisfaction</td>
<td>/10</td>
</tr>
</tbody>
</table>

Positive areas from the match

1. 
2. 
3. 

Areas to be improved

1. 
2. 
3. 

If you would play the match again, What would you do differently?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Ivo van Aken

Match analysis for better periodisation and coaching
Ivo Van Aken July 2003

Introduction

I have plenty of reasons to believe in match analysis to make you a better coach. One of the best examples is for sure when we played in 2000 in Moscow the Fed cup ties against Australia, France and Russia. We couldn’t play with all our best players and we beat all the big tennis countries and believe me, the right information of the match analysis we made of all opponents was an important factor.

Those days we analysed matches with pen and paper and it took us in the evening hours and hours to get out the stats we needed to set up the game plan for the tie. Since then we developed a software running on a Pocket Computer which allows us to bring in more information during the match and offers us during and after the match all stats we can dream of without any extra effort. Today we even have a link with a video programme which allows us even to show the players the match situations we selected out of the stats as important and this of course because of preparing the player in an optimal way.

Which information do we need to get useful stats?

If we want to get detailed stats, and that’s what we need if we want to get out useful information for top junior and senior players, we have to bring as much information on serve, return, third shot, key shot and last shot.

This means for the serve deuce/ad, wide/body/T, serve & volley, amount of pressure of the serve, intended direction for failures, …

It’s quite obvious that on return of serve we look for quality of placement, power, patterns, … on the different serves.

On fast courts we need for sure detailed information on the third shot and on slower courts or once there is a rally on the faster courts information on the key shot is very important to set up the game plan.

As the last shot is mostly the outcome of the key shot, it’s only important because of the scoring system and because of the link to the timer of the video programme.

If we want all this information the software needs, because of limited input time, intelligence.

Visual and numeric stats

A high performing system needs as well visual as numeric stats. During match play and during player contacts (evaluations and setting up of game plans) the visual stats like scattergrams, stratograms and match flow will be very important to get the right information in a glance. Numeric stats will offer coaches the opportunity to look for more details.

Impact on periodisation and training programs

It’s quite obvious that we will coach more concrete task oriented and much more individualised if we have detailed information from stats. This way of coaching will of course influences players and parents in their way of evaluating and therefore we will get much more goal oriented players and parents with a positive effect on motivation, confidence, …
A.C.E.S.™
Advanced Coaching Evaluation System™

A low-input, high-output elite coaching and professional match charting system

Stanley E. Taylor II

INTRODUCTION

The Advanced Coaching Evaluation System™ (A.C.E.S.™) is an automated, comprehensive match-charting statistical tool for advanced, elite and professional tennis coaches and players. ACES™ requires Microsoft Excel, and operates with either the Macintosh™ or Windows™ operating systems.

The primary focus is on tracking singles play performance, strategy and tactics, including:

- **Service** [aces (1) or (2), double faults (D), first or second (1 or 2); SPEED of the serve (in miles per hour or kilometers per hour), TARGET - serve location: B(ody), "T" or W(ide)]

- **Shot selection** (forehand/backhand ground strokes, volleys, overheads, lobs and drop shots)

- **Rally Length** [number of strokes exchanged for each point; the serve is always the first (1) stroke, a double fault is scored as zero (0) strokes; the service return is the second (2) stroke, and so forth]

- **Score** (points, games and sets, including no-add and tie-break scoring)

- **Points Won on Serve** (designates either the 1st or 2nd serve and winning percentage for the server)

- **Service Returns** (i.e., break chances, break points, break point conversions, conversion percentage, etc.)

- **Stroke Production** [Errors (scored for backhand [] and forehand [\]) strokes): L(ong), N(et), W(ide); Winners (scored for backhand [+] and forehand [X] strokes): C(rosscourt), U(p-the-line), I(nside-out).

- **Court Position** (location of both players when the last ball is struck before the point is scored).

The system was created as a diagnostic aid (while coaching visiting ITF juniors, courtesy of the American Samoa Junior Tennis Federation, Pago Pago, American Samoa) playing in USTA-sanctioned junior tournaments in Honolulu, Hawaii. The principal emphasis was to capture then analyze the causes of positive and negative performances Case in point: since the errors/winnings ratio for these juniors was commonly 3:1 or 4:1, identifying the factors contributing to error-production were of utmost importance.

Several years of development and field testing have resulted in multiple revisions to the (data collection) forms to enhance speed and accuracy in data capture, but the major driving factor has been ease of use, from either manual (hand-written) or a computer-based input.

METHODS

It is highly recommended that the A.C.E.S.™ be used in conjunction with video tapes or films of match play, as this will allow for more accurate scrutiny and review, and assist in the determination of more accurate information being acquired and defined. However, the system can be used in "real-time" mode (while watching a live match or television broadcast) in combination with a portable/laptop computer. Once the match information is recorded, it can be analyzed, updated and printed immediately, or on demand in the future. This lends itself for constructing scouting reports, watching tapes and/or videos or recorded matches for tournament preparation.

Data have been collected and compiled into a database comprised from several years of televised broadcasts of Grand Slam, Masters Series (ATP) and Tier 1 (WTA) events, in addition to local, national and Super National USTA-sanctioned junior tournaments.
RESULTS & DISCUSSION
This high-performance assessment tool directs the coach and/or player to draw conclusions based on performance, and not subjective analysis. Scoring in tennis can occur in only two (2) ways - producing winners (balls struck with no reply from the opponent) and committing errors (balls struck with do not fall in the opponent’s court, or are netted). Within the system, no effort is made to differentiate between forced and/or unforced errors, only to record errors and winners and the attendant factors (i.e., court position) which may contribute to the creation and production of either. Other types of statistical measurements (such as the “aggressive margin”) can easily be calculated from the outputs of the A.C.E.S™.

There are several seamlessly integrated components of the ACES™:

MatchMaker™
The form where the details of each match are set-up and entered. From drop-down menus,

- the TOUR is selected (ATP, ITF, USTA, WTA, etc.), and
- the EVENT/VENUE (tournament name and location), then the (registered) players.
- The LEVEL of the tournament (and related points and/or prize money),
- Size of the DRAW, SURFACE are automatically selected from a tournament database.
- The Round of the Tournament, and
- Tournament Players are selected from registered rosters for the particular Tour (i.e., ATP, ITF, WTA, etc.).
- The Scoring must be designated: number of sets per match, Regular/No-Ad, type of Tie-Break (9-point, 12-point or 10-point Super tie break).

Once the match begins, the coach/player inputs the following details in the APPROACH SHOT™ form:

- the Server and the specifics for each point are quickly recorded

Advanced Coaching Evaluation System

<table>
<thead>
<tr>
<th>POINT NUMBER</th>
<th>TARGET</th>
<th>HITTER</th>
<th>STROKES</th>
<th>RALLY LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BODY</td>
<td>PLAYER A</td>
<td>Forehand (GS)</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>BODY</td>
<td>PLAYER A</td>
<td>Backhand (GS)</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>BODY</td>
<td>PLAYER A</td>
<td>Volley (FH)</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>BODY</td>
<td>PLAYER A</td>
<td>Volley (BH)</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>BODY</td>
<td>PLAYER A</td>
<td>Overhead (BH)</td>
<td>0</td>
</tr>
</tbody>
</table>

- Service: 1st/2nd Serve, Ace (1st/2nd),
- Target: Body, Wide or “T”,
• **Hitter** (last person to strike the ball),

• **Stroke** (type of stroke used by the Hitter: Forehand (ground stroke), Backhand (ground stroke), Volley (BH/FH), Overhead (BH/FH), Lob (BH/FH), DropShot (BH/FH),

• **Result**: Error (Long/Net/Wide); Winner: (CrossCourt, Down-the-Line, InsideOut),

• **Rally Length** (number of stroke for the point; the serve is the first stroke, a double fault is zero strokes) and

• **Serve Speed** (in miles or kilometers per hour).

The Score is automatically tabulated based on the players’ performance activities, and recorded on the **S.T.A.T.S.™** form. The systems automatically accommodates NO-AD scoring, tie-breaks and super-tie break sets.
MATCH POINT™
An overview of the match, detailing every point by serve, stroke, result (error/winner), rally length (number of strokes) and score. The heading area details the Tournament, Venue, Surface, Draw size, Round of the match, Match Date and Time, Court (number or name), Length of the match (time by set and in total), Conditions (environment/ weather, temperature and wind), Notes and Match umpire. This provides a synopsis of the entire match flow and scoring in tabular form.
## P.A.S.S.™ The Performance Analysis Statistical Summary

The P.A.S.S.™ System is a basic display form for the most common match statistics.

### The Championships, Wimbledon

<table>
<thead>
<tr>
<th>Set 1</th>
<th>Set 2</th>
<th>Set 3</th>
<th>Set 4</th>
<th>Set 5</th>
<th>Total Points Won - by Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>24</td>
<td>32</td>
<td>21</td>
<td>51</td>
<td>298</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>29</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>44</td>
</tr>
</tbody>
</table>

### Total Points Won - Match

**ITF Level III Coaching Course – Tactics Module – Match Charting Systems**

<table>
<thead>
<tr>
<th>1ST</th>
<th>2ND</th>
<th>3RD</th>
<th>4TH</th>
<th>5TH</th>
<th>TOTAL POINTS WON - MATCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>155</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Service Games

<table>
<thead>
<tr>
<th>Ivanisevic, G. CRO</th>
<th>Rafter, P. AUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Serves</td>
<td>16 13 18 16 30</td>
</tr>
<tr>
<td>2nd Serves</td>
<td>11 11 8 10 15</td>
</tr>
<tr>
<td>Aces</td>
<td>3 5 4 5 10</td>
</tr>
<tr>
<td>Double Faults</td>
<td>2 5 1 2 6 1 1 1 1</td>
</tr>
<tr>
<td>Total Points Served</td>
<td>29 29 27 28 51</td>
</tr>
<tr>
<td>1st Serve Pct. (%)</td>
<td>55% 45% 67% 57% 59% 67% 61% 58% 82% 61%</td>
</tr>
<tr>
<td>Points Won on 1st Serve</td>
<td>13 10 15 12 26</td>
</tr>
<tr>
<td>1st Serve Winning Percentage</td>
<td>81% 77% 83% 75% 87%</td>
</tr>
<tr>
<td>Points Won on 2nd Serve</td>
<td>8 7 6 3 11</td>
</tr>
<tr>
<td>2nd Serve Winning Percentage</td>
<td>73% 64% 75% 30% 73%</td>
</tr>
<tr>
<td>Total Points Won</td>
<td>21 17 21 15 37</td>
</tr>
</tbody>
</table>

### Return Games

<table>
<thead>
<tr>
<th>Ivanisevic, G. CRO</th>
<th>Rafter, P. AUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving Points Won - 1st Serve</td>
<td>1 4 6 5 5</td>
</tr>
<tr>
<td>Receiving Points Won - 2nd Serve</td>
<td>4 2 4 1 8</td>
</tr>
<tr>
<td>Total Points Won Receiving</td>
<td>6 7 11 6 14</td>
</tr>
<tr>
<td>Break Points Chances</td>
<td>3 2 1</td>
</tr>
<tr>
<td>Break Points Converted</td>
<td>1 1</td>
</tr>
<tr>
<td>Break Conversion Percentage (%)</td>
<td>33% 50% 100%</td>
</tr>
<tr>
<td>Break Points Saved (Lost)</td>
<td>2 1 2 1</td>
</tr>
</tbody>
</table>

### Stroke Production

<table>
<thead>
<tr>
<th>Ivanisevic, G. CRO</th>
<th>Rafter, P. AUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forehand winners</td>
<td>2 1 2 1 5</td>
</tr>
<tr>
<td>Forehand errors</td>
<td>4 5 3 1 7</td>
</tr>
<tr>
<td>Backhand winners</td>
<td>2 2 3 3 1</td>
</tr>
<tr>
<td>Backhand errors</td>
<td>8 6 5 7 11</td>
</tr>
<tr>
<td>Forehand Volley winners</td>
<td>2 2 1 2 1</td>
</tr>
<tr>
<td>Backhand Volley winners</td>
<td>2 2 1 4 2</td>
</tr>
<tr>
<td>Forehand Volley errors</td>
<td>1 2 1 4 2</td>
</tr>
<tr>
<td>Backhand Volley errors</td>
<td>1 2 1 2 1</td>
</tr>
<tr>
<td>Overhead winners</td>
<td>1 2 1 3</td>
</tr>
<tr>
<td>Overhead errors</td>
<td>1 2 1 3</td>
</tr>
<tr>
<td>Lob winners</td>
<td>1</td>
</tr>
<tr>
<td>Lob errors</td>
<td>1</td>
</tr>
<tr>
<td>Drop Shot winners</td>
<td>1</td>
</tr>
<tr>
<td>Drop Shot errors</td>
<td>1</td>
</tr>
<tr>
<td>Total Winners</td>
<td>9 7 5 6 13</td>
</tr>
<tr>
<td>Total Errors</td>
<td>13 15 9 14 21</td>
</tr>
</tbody>
</table>
| WINNERS/ERRORS Differential | (4) (8) (4) (8) (8) | (9) 1 (15) (2) (13)
S.T.A.T.S.™

The primary match-charting form used to collect all performance information is the Strategic Tactical And Technical Sheet™. Significant position information is recorded regarding the placement of serves as well as the position of players when the last ball is struck before the point is scored. The manual form differs slightly from the automated (computer-driven) form. Notice that break points are highlighted - this features allows the coach and/or player to concentrate and focus on the pivotal points of each game, set and the match.
CONCLUSION
The serve is the single most important stroke in modern offensive tennis. It is difficult to refute that the primacy of
the serve in both the men’s and women’s game. A strong serve is a must, and should of itself open the door for
wins in a staggering 40 percent of points by forcing weak returns or service or errors. The big serve is twice as
effective on fast courts as on slow clay or composition courts. Good first serves and good deep deliveries, whether
first or second serves, ultimately produce a won point in about 75% of the cases.

To win in tennis, you have to be able to break your opponent’s service. It is essential to develop a good return of
service—one of the most difficult as well as important shots in the game. Receiving position is important—a foot or
more inside the baseline on a line bisecting the possible angle of service delivery is recommend. By far, the most
important thing is to get the ball back—if you don’t, you have lost the point, and if you do, you have almost an even
chance of ultimately winning.

Attack is the foundation of modern tennis. The percentages favor the attacker, and tennis is a game of
percentages. The net position is the best position from which to exploit the attack, as shown by the fact that net
play accounts for close to a third of all points won. The best volleys prepare the path to the net properly by hitting
a forcing approach shot to draw a weak, easy-to-volley return. The volley should really be thought of as a
combination of a forcing approach shot followed by a volley. The most important things to remember are to keep
the approach shots deep and, when you take the net, to move in close (within 6 to 9 feet) so you can volley down
severely or angle the ball sharply. Always assume each volley will be returned and, as you anticipate the speed
and direction, shift you volley position accordingly.
Effectiveness of the Service
Marcelo Albamonte

1 Argentine Tennis Association. Buenos Aires, Argentina.

Introduction
Which is the best way to measure effectiveness of a service?
When it comes to service effectiveness, it has been heard that only the percentage of the first serves are mentioned, or, in many cases, the percentage of points a tennis player wins at first serve. What about the second serve? Doesn’t it also count at the moment of measuring effectiveness of the service? In my opinion all and each one of these items should be taken into consideration. The steps will be the following: firstly, I’ll make an analysis of the first serve of both players; secondly, the second serve, and finally both serves together to try and reach a definite conclusion.

Analysis of the First Serve:
The analysis of the percentage of First Serves in conjunction with the percentage of points obtained when this happens leads us to determine the **Effectiveness of the First Serve**

Margin of Effectiveness of First Serve = % First Serves at play X % Points obtained at First Serve.

Analysis of the Second Serve:
The Second Service is complementary with the First, and should be studied on the basis of this. The point I am trying to make here is that between the First and Second Serve we have a 100 % of serves taken, therefore, we shall determine the percentage of Second Serve by deducting it from the 100 % of first Serves at play. It should be pointed out that in the case of the Second Service its Effectiveness is measured on these values and **not in conjunction** with the Percentage of the serves at play (as is in the case of the First Serves) This is so on the grounds that the fewer the percentage of Second Serves we should make, the higher the effectiveness of the overall Service (i.e., First Serves are at play).

Analysis of the Service (First and Second Serves together):
We shall determine the Margin of Effectiveness of the Service by means of the following formula (MG E.S.)

MG E.S. = Margin of Effectiveness of the First Service * + ( % of Second Services taken out of the total services made X % Effectiveness of the Second Service)

* Margin of Effectiveness of the First Service = % First Services at play X Percentage Points obtained once the First Serve is at play.

Final Conclusion:
The Margin of Effectiveness of the Service (MG E.S.) lets us infer the following

1. If we assume that each player will serve approximately in half the points obtained in a match, we can state that half of the MG ES will give us the approximate percentage of points won in a match where that Service is at play. Thus, whoever could obtain an MG ES of 60% (estimated on the basis of at least 10 encounters), he/she shall win about 30% of the points which make up a match with a successful service.

2. According to the MG E.S. we can also state the likelihood of a broken Service. For instance, those players having an MG E.S. of 31% to 38% are likely to have a broken service in 4 out of 5 games, from 39% to 45% in 3 out of 4 games, from 46% to 50% in 3 out of 5 games, from 51% to 54% in 1 out of 2 games, from 55% to 59% in 1 out of 3 games, from 60% to 64% in 1 out of 4 games, from 65% to 69% in 1 out of 5 games, from 70% to 74% in 1 out of 10 games, and over 75% there’s practically no opportunity of breaking the Service.