FUNDAMENTAL VOLLEYBALL SKILLS

"Good basketball is nothing more than the ability to properly and quickly execute the fundamentals of the game for the welfare of the team. Individual technique and maneuvers that have been practiced over and over again must now be second nature. You must not spend so much time on developing the teamwork that you forget the individual fundamentals. A team that is sound fundamentally but does not have a strong team offense or defense will still be hard to beat; but a team that has a very difficult offense or defense will be easily beaten if they are not sound fundamentally. It is a game of fundamentals. Many people have been surprised to find out that at UCLA we work more than half of every practice on our fundamental drills, even the last practice of the season" **– UCLA basketball Coach John Wooden.**

STAGES OF LEARNING

Cognitive:

- Understand the task and what it demands

Associative:

- Focus on keys
- Motor program development
- Practicing with feedback

Autonomous:

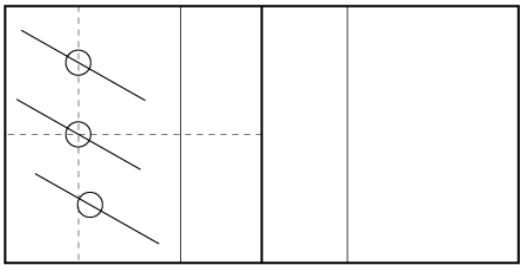
- Perfection of skill
- Mindful awareness of movement and outcomes
- Focus on what you see

"The question is not what you look at, but what you see" (and give feedback about**). - Henry David Thoreau**

Dr. Watson: "Holmes, you see everything." Sherlock Holmes: "I see no more than you, but I have trained myself to notice what I see." **-Sir Arthur Conan Doyle**

"Excellence is achieved by the mastery of fundamentals**." -Vince Lombardi**

SERVE / SERVE-RECEIVE RESPONSIBILITIES

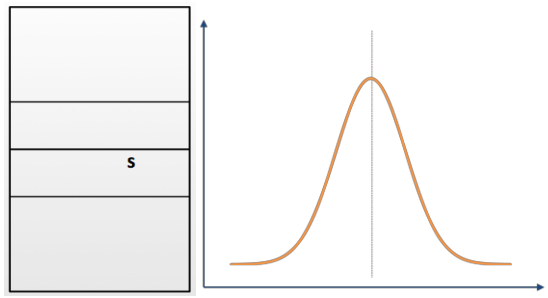


Put a passer where most of the balls go. This is middle-middle.
Now we need a player left middle-middle.
Finally a player right middle-middle

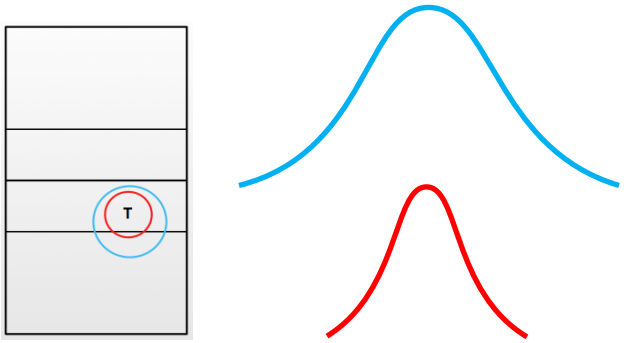
Choate (1985) and Larsen (2002) Studies:
Left side = 2.3
Midline = 2.4
Right side = 1.9

Good / Better / Best = Right / Left / Midline

TRADITIONAL PASSING TARGET



TARGET OFF THE NET



SETTING TARGETS JOE TRINSEY, USA VOLLEYBALL

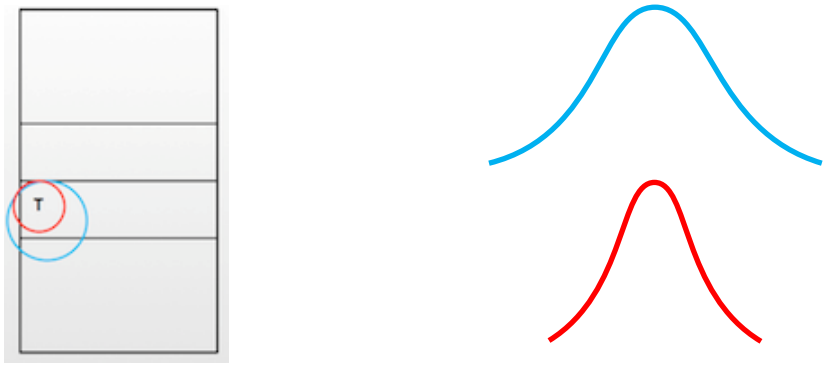
Setting: “We already knew that off was better than tight and inside better than wide. The breakdown for us (and this is just for a Go on the left side, but the trend is basically the same everywhere.”

Perfect set: 33% efficiency
Inside (more than 5 feet in): 28% efficiency
Off (more than 5 feet off): 28% efficiency

Tight (within 2 feet of the net): -7% efficiency
Wide (at the antennae or wider): 13% efficiency

“And the numbers are actually even a little worse than that for tight and wide, because some very wide sets I don’t even give the attacker an attempt, I just mark it as a free ball. Likewise with very tight sets that basically turn into a joust, I mark as a setting error, not even as a tight set. So you’re talking about a slight-but-not-too-bad loss of efficiency if you set off or in, but losing 20% efficiency by setting wide, and losing 40% efficiency by setting tight is huge.”

SETTING TARGET?



FOREARM PASSING

PRINCIPLES

- The ball only “knows” angles (so let the angle do the work)
- Simple movements are better than complex movements – the simpler the movement the more easily repeatable it will be, and therefore more accurate over time.
- The arms and hands respond the most quickly to unexpected events, and they have the most “touch”
- Passing high and off the net is statistically proven to be the most effective

FOREARM PASSING KEYS

1. Make a platform with your wrists and hands

2. Keep your platform straight and move your platform simply (elbows straight, hands down, legs don’t provide power or control)

3. Face the Ball, Angle the Platform (let the angle do the work to control force and direction) – leading leg

4. Shuffle (get ball on midline, but let deep serves go by)

5. See the Server; See the Spin, **see and connect the outcome** (play with your eyes)

See the server and the spin?

- Get a visual on the server from the time she gets the ball. Begin to identify possible serving direction from where she is standing and where she is looking. Look for other "tells".
- Toss, Tempo, and Shoulders. The toss is just like the set. Where is it going to take the server/hitter (based upon the angle of attack and in relation to their body). How fast (tempo) are they moving, stepping, running? Shoulders - what are their shoulders doing and at what angle?
- S = spin. Spin or no spin? Recognizing what type of serve it is (may happen earlier in the sequence). If it's spinning, how? Spin equals direction. If it's not spinning, determine velocity.

FOREARMS VS HANDS FOR PASSING

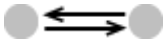
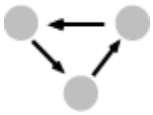
Statistically for both men and women at all levels, passing with forearms produces more favorable results. In the 2010 World Championships, Russia and Brazil played for the Gold Medal. In that match, Russia passed 89 serves, 88 of them with their forearms. Brazil passed 102 serves, 93 with their forearms.

In addition to a more versatile passing platform, passing with forearms has the additional advantage of being easier for all hitters to time their approaches, and easier for hitters that have to pass to give themselves room to take their attack approaches (especially bic hitters).

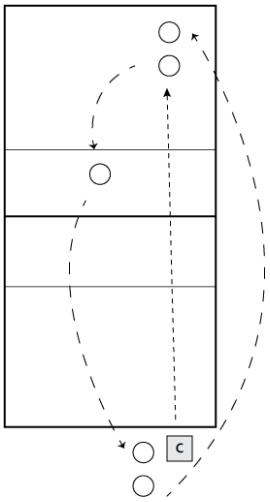
SERVE RECEIVE STARTING POSTURE

Hands on knees. Passer goes from hands on knees to an upright position (arms are down and straight)
Passer isn’t bent over at the waist. Comfortable, athletic posture = easier movements & better vision.

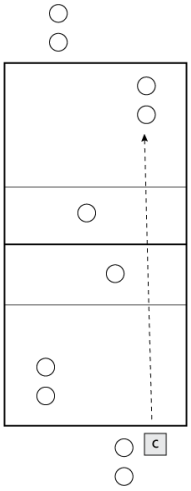
BEGINNING FOREARM PASSING DRILLS

Drill		In-a-Row Contacts	Use w/ Key Number
Toss – Hit – Catch		20	1,2
Back and Forth		20	1, 2, 3,4
Linear Threes		30 x 3 (Middle player plays the ball over her/his head. Switch middle player after 30)	1,2, 3, 4
Triangle Threes		45 (go to the right only – counterclockwise)	1,2, 3, 4

ONE SIDED BUTTERFLY



TWO SIDED BUTTERFLY

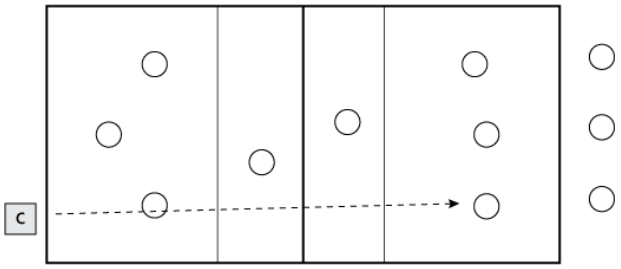


During early development, you can move up in the court and "bowl" the ball (toss underhand) to the players. This helps control the regulatory stimuli of ball speed and movement, and helps you to work the seams and give feedback on specific keys. Think also about a two ball butterfly.

As players develop, you can step back and serve.

The two-sided butterfly involves the same concepts as above. This allows for more reps, but requires another coach to provide feedback. If you don't have another coach, you can always run this drill with players bowling or serving in the second coaching spot.

DOG HOUSE



Coach to bowl (or serve)
Rules:

- Win a rally, shag a ball, and get back in line.
- Lose a rally, go in the doghouse.
- You win a point every time you win a rally.

SERVING

PRINCIPLES

- Correct serving movements use torque to generate force
- Tasks that require speed and accuracy (like serving) are learned best if there is an equal emphasis on both speed and accuracy from the beginning
- Simple movements are better than complex movements – the simpler the movement the more easily repeatable it will be

SERVING KEYS

STANDING FLOAT – KEYS

1. Bow and Arrow
   - Stand 45°
   - Ball in one hand
   - Hitting elbow and shoulder back
2. Place, Step, Hit OR Step, Place, Step, Hit
   - Place ball in front of hitting shoulder
   - Contact on heel of hand (no spin)
3. Place, Step, and Swing to Target
4. See and connect the outcome

ONE-HANDED JUMP FLOAT - KEYS

1. Ball in left hand, left foot forward
   - Standing 45 degrees (1st step is with right foot)
2. Step, Step, Toss, Step, Step, Hit
   - Place ball in front of hitting arm
   - Don't swing arms back when jumping – they stay up in bow and arrow position.
   - Contact on heel of hand (no spin)
3. Torque
4. See and connect the outcome

TWO HANDED JUMP FLOAT – KEYS

1. Ball in two hands, Right foot forward
   - 1st step is with right foot
2. Step, Step, Toss, Step, Step, Hit
   - Place ball in front of hitting arm
   - Don't swing arms back when jumping – they stay up in bow and arrow position.
   - Contact on heel of hand (no spin)
3. Torque
4. See and connect the outcome

JUMP SERVING – KEYS

1. Right Hand, Right Foot - 1st step is with right foot
   - Step, Toss, and take the rest of the four-step approach and hit the ball
   - High toss allowing them to jump in to the court
   - Small, Bigger, Biggest
   - Slow, Faster, Fastest
2. Double arm lift
   - Big reach, straight back, arms straight
3. Bow and Arrow Arm swing

SERVING DRILLS

Drill	In-a-Row Contacts	Use w/ Key Number
Ball and a Wall and a Partner	20	1, 2, 3
Serve and Chase	10	1, 2, 3
Queen/King of the Court (+toss) Queen/King of the Court ball rules: Your ball, my ball Pick it up throw it to me (over the net)	-	1, 2, 3

SERVING AND MINDFULNESS

Serving is a unique skill in volleyball for at least three reasons:

- First, the serving motion is a closed skill (closed skills are skills where the environment does not change and the movement can be planned in advance). All the other skills in volleyball are open skills (skills in which the environment is constantly and unpredictably changing).
- Second, because the serving motion is a closed skill, serving is probably the easiest skill of the game to perform (almost all players can serve the ball over the net 90% of the time, but no players can, for example, dig 90% of the balls hit at them).
- Finally, because serving is relatively easy, serving is often the most under-practiced of all the fundamental skills.

We must make sure that our servers have and process feedback, and most of this feedback must come from connecting serving movements to serving results. In other words our servers must have MINDFUL serving practice. How do we accomplish this? What are the secrets of mindful practice, what are the secrets of serving?

SECRET NUMBER ONE:

The secret of feedback. If you don't receive, internalize, and benefit from the feedback provided by your serves (and your coaches)—if you don't consciously and subconsciously correlate your serve results with your actions and learn from your experiences—then you will never improve. So you can't just practice, you must do mindful practice. Here are four rules for mindful practice:

- Never just serve, and serve, and serve. You must take the time after every serve to process feedback, and then before your next serve you must perform your pre-serve routine and ritual.
- Know your precise target. Have mats at which you are trying to serve (if you are a beginner, maybe you are just trying to serve it over the net and into the court). Later, it is best of all to have receivers you are trying to ace or make them pass poorly.
- Watch the trajectory of each serve and try to connect what you did to produce this direction / velocity.

SECRET NUMBER TWO:

The secret of the pre-serve routine. A good routine includes the following:

- Assessment of match conditions and serving targets.
- Visualizing the ball flight of the desired serve.
- Visualizing the swing that will produce the desired serve.

SECRET NUMBER THREE:

The secret of the pre-serve ritual. The pre-shot ritual is not about hitting the ball. It is about training your subconscious to perform when you are scared, nervous, when your heart is beating and the adrenaline is flowing. The ritual is a series of timed motions, and both the order of these motions and the timing of them must be repeatable. The ritual must be used in all of your practice and with all of your serves on the court. It is the "ready, set, go" that tells your subconscious that it is time to serve a great serve, to execute the same motions you grooved thousands of times in practice.

Practice does not make perfect, practice makes permanent. Bad practice makes permanently bad players, and poor practice makes permanently poor players. Perfect practice makes improvement, continued perfect practice makes good players, and long-term continued perfect practice makes great players. Seeing improvement is addictive, and if you see statistical improvement over time, it inspires you for more and more good practice.

5 ELEMENT FLOAT SERVE MATRIX

by Owen Monroy

Ronald Gallimore, co-author of You Haven't Taught Till They Have Learned, talks about a master coach's matrix which is a collection of technical knowledge, strategy, experience, and practiced instinct ready to be put to use to locate and understand where the students are and where they need to go. Daniel Coyle writes about Gallimore's concept in The Talent Code (pages 178-179). The 5 float serving elements aim to contribute to the serving coach's matrix by increasing the depth of their technical knowledge. Gallimore comments "A great teacher has the capacity to always take it deeper, to see the learning the student is capable of and to go there. It keeps going deeper and deeper because the teacher can think about the material in so many different ways, and because there's an endless number of connections they can make."

Players will likely solve for some of these elements with only the principles and keys from serving. We think it is useful however, that coaches increase their knowledge of serving mechanics in order to guide the developing player more effectively toward efficient and consistent patterns.

1. ACCURATE CONTACT

Accuracy of contact is important to every skill in volleyball but in serving the pay-off is special. When force is applied through the center of a volleyball, it leaves the hand without spin. In the absence of spin, a volleyball's seams interact with the air creating varying drag and pressures around the ball causing it to float unpredictably. Developing an accurate contact is paramount to serving a ball without spin. Fortunately feedback toward this end is easy, anyone can observe whether the ball is spinning and therefore can seek to make measurable outcome based improvement. As coaches it is important to hold the server to the highest standard of contact accuracy, aiming for serves that appear "frozen" during flight. NOTE: The goal for beginning servers is the same as advanced servers but beginners may benefit from recognizing that increased distance in ball flight is likely a result of a more accurate contact as the ball will rebound off their hand further when it is struck near the center.

2. IMPACT ANGLE

Impact angle is simply the direction of force applied by the accurate contact. Generally, the closer your angle of impact is to being parallel to the floor, the smaller your margin of error. A server can stand in one spot and serve two balls at the same speed without spin, but if the impact angle is different, the two serves will have very different trajectories and results. It is important that players understand that the depth of their serve is a combination of this angle and the torque of their swing. Players should experiment by combining angle and torque to find the most effective delivery to a target. Low and fast are not ultimate objectives. Modest pace that sustains a significant float action and accurate placement can trouble even the best passers. Finding an effective balance is crucial to developing great servers.

3. CONTACT HEIGHT

The taller the athlete the greater their contact height is likely to be. The goal of contacting the ball high should be secondary to making an accurate contact with a consistent impact angle. The trouble with asking a server to contact the ball high is that when the arm is extended away from the body it becomes increasingly difficult to produce a flat swing. The flat swing used when float serving is very different than a topspin swing. A topspin swing emphasizes torque, it benefits from the increased leverage of a fully extended arm rotating in an arc around the shoulder. The float serve swing is different in that the path of the hand should NOT be an arc but closer to a straight line (until contact when it follows through in a curve). So while it still uses torque to generate hand speed, the hand itself acts to convert rotational force to a linear application.A great float (flat) swing is often much closer to the servers head level than people realize causing the server's arm to be bent on contact. The jump-float is a way to add some momentum and raise the server's contact height without compromising the flat impact angle of the float swing with excessive arm extension. Allowing players to swing in a comfortable range is important to building consistency in the contact height, impact angle, and contact accuracy. NOTE: Beginning and first-time servers who have not developed an arm swing may need to be instructed to reach up toward the ball but once they are able to swing their arm with a hint of efficiency, encourage them find a comfortable and effective range for a flat swing.

4. LINEAR EFFICIENCY

Training a servers' linear efficiency is probably the quickest way to improve a servers ability to accurately target regions of the court. Many servers approach, toss, and swing are not focused toward the same endpoint. The server should face the target, step toward the target, toss toward the target, and follow through to the target. By unifying their movements in one direction the server will increase efficiency, consistency, and accuracy to target. Aligning these motions will also contribute to a more repeatable accurate contact, contact height, and impact angle.

5. TARGET SPEED

Velocity is important to a successful float serve but should be emphasized after a player starts to achieve a base level of competency with the first four elements. Most players naturally want to serve as hard as possible but lack the control to execute consistently. Focusing servers on eliminating spin and understanding appropriate impact angles provides them a base from which to apply speed more aggressively. Many coaches use radar to push their servers toward maximum speed but spend too little time adjusting the other elements that allow velocity to truly be an asset. Maximum speed may not be the most productive language to use when training servers. Instead try observing the limits of servers (what speeds he or she executes elements 1-4 most consistently) and key in on optimum speeds to compliment their favorite or desired impact angle. Their target speed may be on the low end of their average speed or significantly above what they normally produce, the objective being to combine the benefits of all the float serve's attributes for maximum effectiveness. Think of radar as a gauge that allows players to regulate the application of torque and the repeatability of their arm swing for a specific serving task (see float serve variations at bottom of page). NOTE: Beginning and first-time servers should be started closer to the net to focus on the first four elements before emphasizing speed. Obviously a certain amount of force is necessary to get the ball over the net but more crucial is the efficiency and accuracy of how force is delivered.

STATISTICAL SERVING GOALS:

- Opponent receive average of < 2.0
- Error percentage < 8%
- Opponent perfect pass percentage of < 35%
- Error to Ace ratio 1:1

SERVING STRATEGY CONSIDERATIONS:

- Passers tend to get worse the farther they are forced to move
- Passers tend to get worse the faster they are forced to react
- Passers tend to get worse the more unpredictably the ball moves
- It is easier for passers to move and pass horizontally than short or deep
- Seams are vulnerable because they force passers to move and communicate
- The benefit of serving short may be independent of the the pass result, i.e. passer hitter's approach is shortened, middle attacker's slide route is interrupted etc.
- Opponent weaknesses should determine how speed or accuracy (court zone and/or float contact) are managed during competition.

4 FLOAT SERVE TYPES TO DEVELOP:

- Deep Fade (24-30ft past the net). This serve passes the net near the top of the antennae but is struck firmly and drops in the deep 1/4 of the court.
- Deep Flat (20-30ft past the net) This serve passes the net below the height of the antennae and lands deep in the back 1/3.
- Short Seam (12-15ft past the net) looks like deep flat serve but has significantly less power and drops much shorter as a result.
- <10ft Short (5-10ft), this serve has a significantly different impact angle and lands short enough to move the passer significantly which can alter the routes of opposing attackers.