



by Ed Palubinskas

FIBA
We Are Basketball

THE JUMP SHOT

Ed Palubinskas was the top scorer at 1976 Olympics Games with the Australian National team. Best NCAA free-throw shooter (92.4%) with LSU, he developed a unique method of teaching free-throws and jump shots (www.freethrowmaster.com). He was the personal trainer of Shaquille O'Neal of the Lakers, Lisa Leslie of the Sparks, and now of Lauren Jackson of the Storm of the WNBA.

All the mechanics used to complete a free-throw are an exact duplicate during a jump shot. The only difference is that you release the ball at the top of your jump or just a fraction of a second before you get to the peak. If you have great springs in your legs then you can shoot whenever you want, because you have so much time in the air.

BALL HAND RELATIONSHIP

You will notice (photo 1), we have here a golf glove for better visual application and comprehension. It also is a good idea to try and practice shooting with a golf glove to get acquainted with "touch" and "feel" of the actual ball being released.

It is where your mind needs to be anyhow and not focused on making the shot.

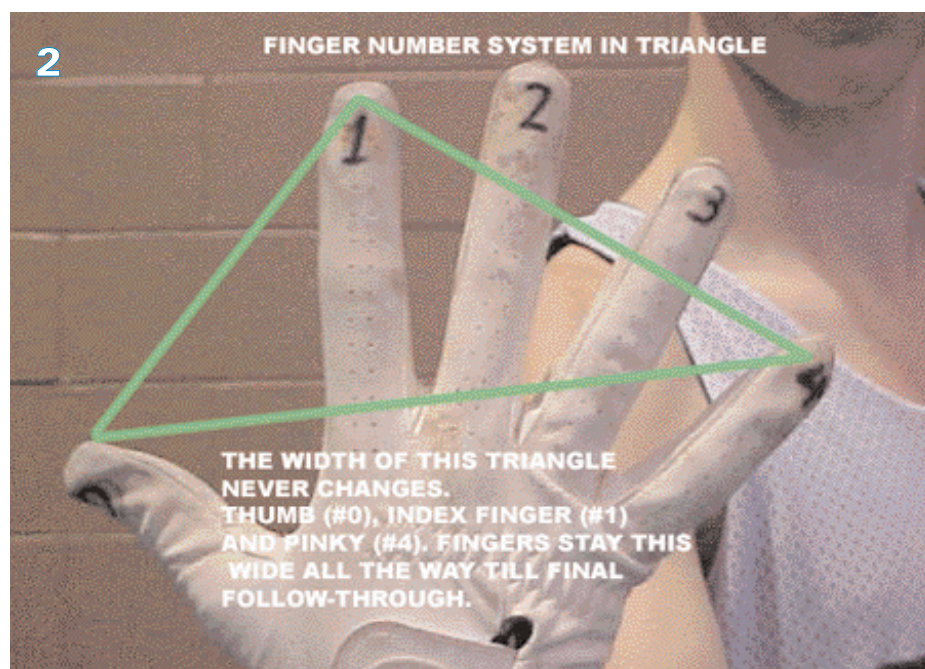
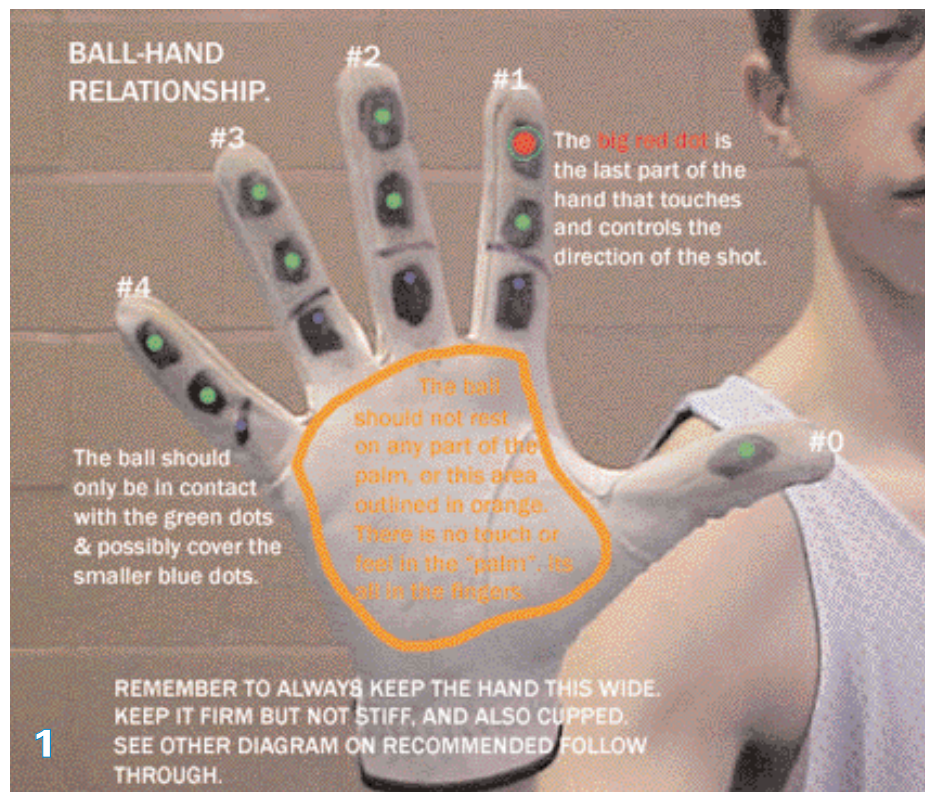
In this case, the fingers are numbered 0-4, with the thumb being 0, the index finger being 1, the middle finger is 2, the ring finger being 3 and the pinky is 4.

The green dots signify that the ball should definitely be in contact with the green dots, and many of you will want the ball to cover the smaller blue dots, probably because you may have smaller and/or weaker fingers.

Notice that no part of the palm touches the ball, ever.

It is a common flaw of all shooters to start closing their hand during the shot release. You must keep the shooting hand wide throughout the whole shot process, from beginning to end.

The big red dot signifies the final contact



3 BALL ON FINGER PADS - REAR VIEW



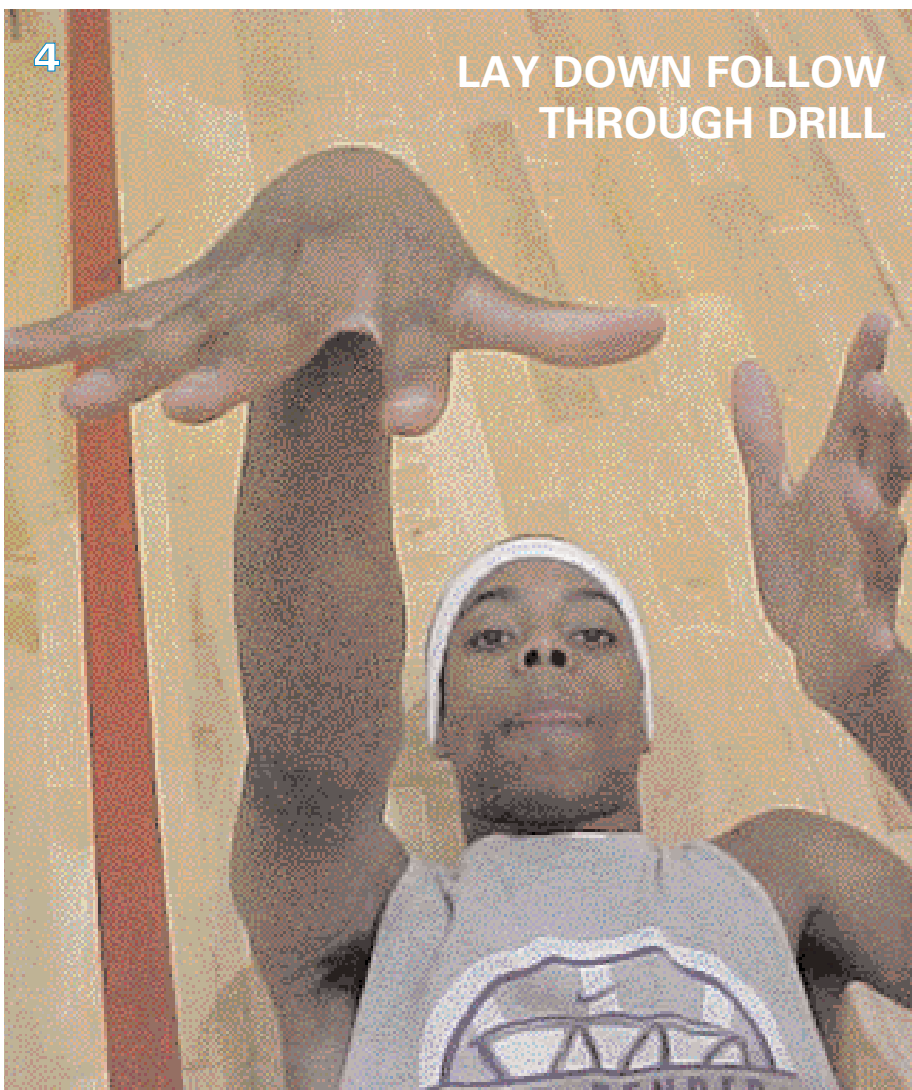
point with the ball and you must be mentally cognizant of this contact point as you pull the trigger.

FINGER NUMBER SYSTEM IN TRIANGLE

Looking at the back of the shooting hand you will see the numbers allocated to each finger and the reason for this is to have each finger accountable for physical effort on each shot (photo 2). You must be able to trace back the effort given by each finger. There is an individual accountability for each appendage. If you have never been able to actually tell which fingers have been directly involved and the amount of thrust power applied by each finger, then you have not been in touch with the finesse aspect of shooting, and you definitely need some fine tuning. If I would apply a non-scientific percentage of accountability per finger, then it would be as follows:

- ▼ 0 or thumb- provides stability and has about 10% involvement.
- ▼ 1 or index finger-This is the big gun. I would allocate about 60% control to this trigger finger. See the red dot.
- ▼ 2 or the middle finger has a surprisingly small amount of control or about 15%.
- ▼ 3 or the ring finger is just a stabilizer and has about a 5% role.
- ▼ 4 or the pinky finger balances out the triangle with a 10% value. By keeping it wide the pinky provides width, stability and keeps the ball from "fishtailing".

4 LAY DOWN FOLLOW THROUGH DRILL



"PALUBINSKAS PERFECT SHOOTER'S TRIANGLE"

The basis of the perfect shooter's triangle is to have fingers, joints and pads numbered so that each individual part of the hand can be held accountable. The reason the ball misses a lot is because the ball only responds to the physical effort dictated by the shooter. The ball path does not lie. And Newton's law says "For every action there is an equal and opposite reaction" (photo 3).

You are doing something to make the ball go left or right, long or short. If you don't understand why, then that is why you won't improve significantly. "The Palubinkas Triangle" demonstrates appendage accountability. Just lay down on the floor and shoot up at the ceiling and study your hand and feel which fingers do what (photo 4). Just shoot about 2 meters (or 6-8 feet high) is enough. Do hundreds.

Next drill, lay under the backboard at 45 degrees to the glass and rim. While laying down shoot the real "lay-up" while on

your back and see if you can make 5 in a row off the glass. You can raise your head off the floor, but keep your back against the floor. This is very difficult and it will open your eyes by showing you how weak we really are as shooters. Focus on the perfect triangle and follow through and not on making the basket. This is backwards thinking. Practice this daily and you will get stronger and more accurate with the right mechanics.

ELBOW LOCATION BEFORE SHOT

This goes along with the perfect "shot pocket" (photo 5). Where do you actually start your shot from? Is it in front of the belly, chest, face, to the side near the ear or near the forehead? Your starting point or "shot pocket" reveals a lot about your shot (photo 6) as far as shooting angles, time of release, time of follow through, amount of ball rotation etc.

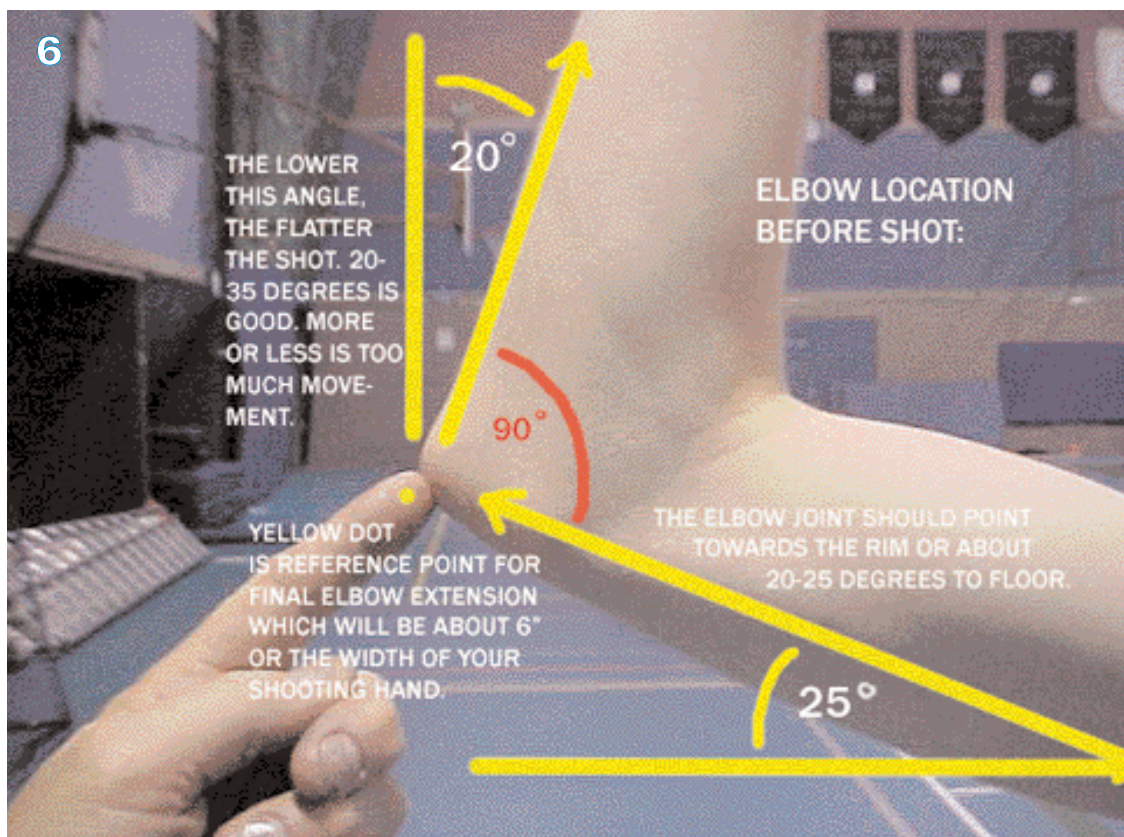
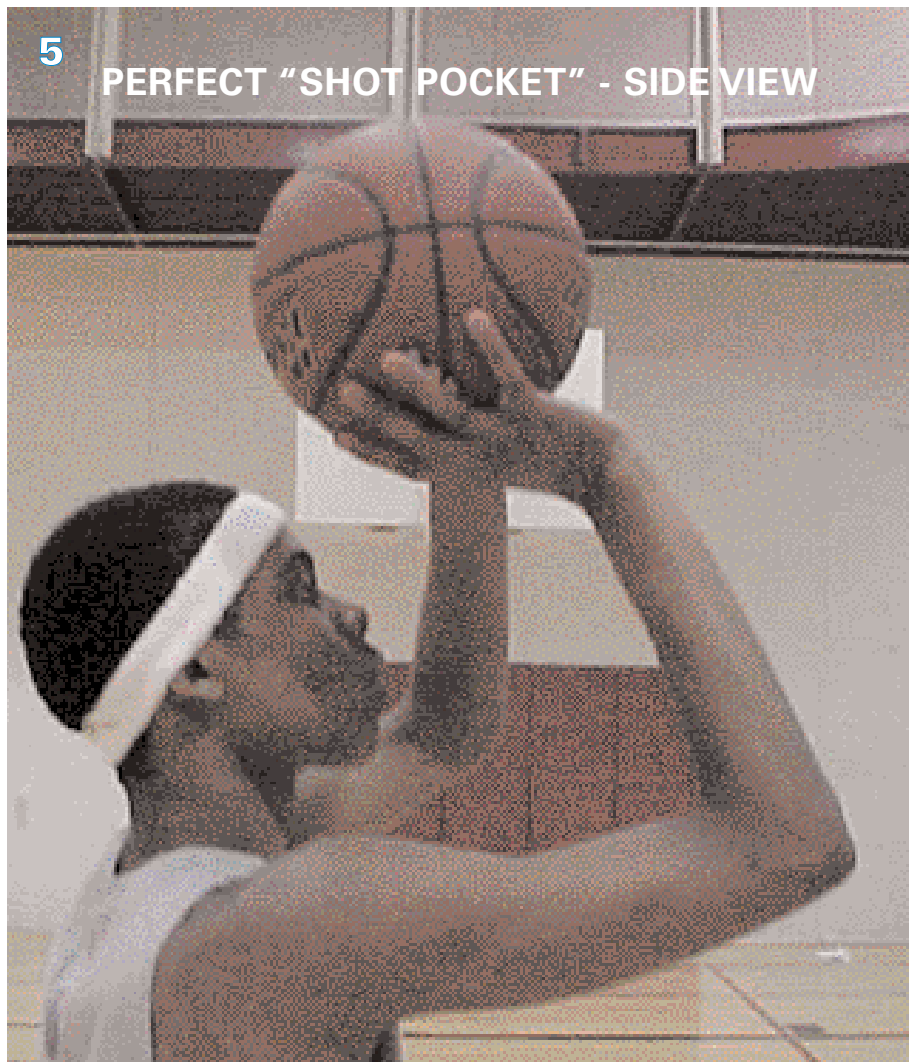
The lower the ball is (near the stomach-usually younger players with weak arms and lack upper body strength as well as weak fingers) the more effort is involved in the "upthrust" and thus there is no room for any "pause" time where you can get your bearings on direction and distance.

INCORRECT "SHOT POCKET"

By the time this shot is released the elbow joint will have moved about 0,80 meter (or 2 and a half feet) before it gets to the locked position (photo 7). If the elbow is not directly under the center of the ball then this creates inconsistent direction, but not necessarily distance (photo 8). This action from the stomach or chest almost becomes a "throw". If you do shoot with the ball in a low pocket, focus on the elbow and notice if it is inside (medial) or outside (lateral) of the center of the ball.

KNEE MOVEMENT BEFORE SHOT

Both feet must be shoulder apart, and pointed to the basket, with the right foot about five centimeters (or a couple of inches) ahead, if you are right-handed (or the opposite if you are left handed). A big reason to





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INCORRECT SHOT-POCKET.

USED BY PLAYERS WITH WEAK ARMS, HANDS AND SHOULDERS

BY THE TIME THE ELBOW GETS TO A LOCK POSITION OR TO THE 45 DEGREE RECOMMENDED ANGLE, THERE IS SO MUCH ROOM FOR ELBOW ALIGNMENT ERROR. THIS POSITION ALSO FORCES THE BALL TO THE SIDE OF THE HEAD OR FACE. IT JUST CHANGES ALL THE DYNAMICS OF SCIENCE, LAWS, ANGLES ETC.

90 DEGREE TOO MUCH LIFT, FINESSE BUFFERS.



8

BAD SET UP

TOO MUCH BALL ON PALM OF HAND.

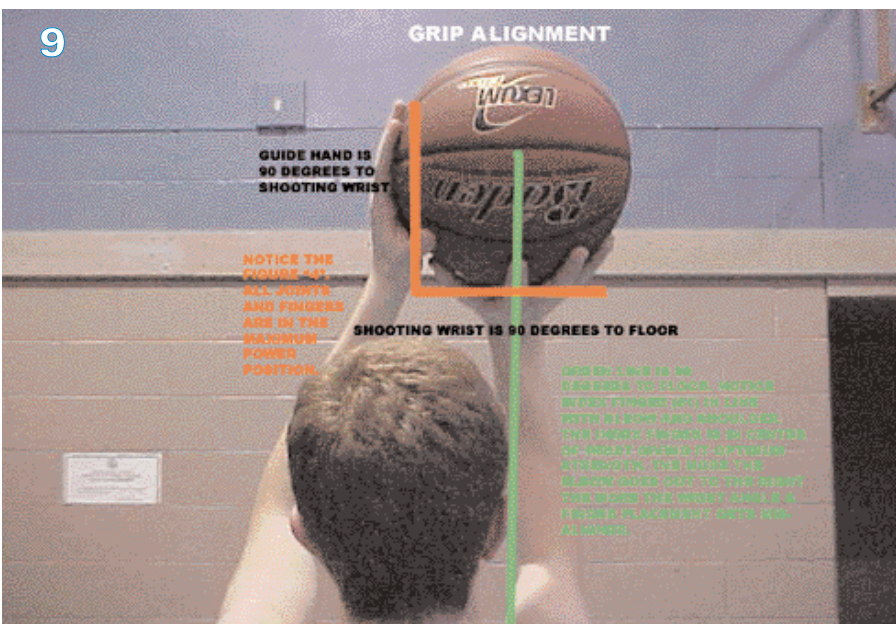
GUIDE HAND IN THIS CASE IS ONLY PART OF THIS SET UP THAT IS GOOD.

EVEN THE LEFT ELBOW IS NOT A PROBLEM HERE.

LEFT SHOULDER IS BEHIND THE RIGHT, OUT OF BALANCE AND NOT "SQUARE" TO BASKET.

WRIST, ELBOW AND SHOULDER SHOULD BE IN LINE WITH THE "RED" LINE.

THE BLUE TRIANGLE, OR THE FURTHER THE ELBOW MOVES AWAY FROM CENTER, THE MORE THE CORRECT ANGLES CHANGE ON THE PERMANENT, THUS CAUSING MORE MECHANICAL CONSTRAINTS. REMEMBER, THE LAWS OF SCIENCE MUST BE FOLLOWED.



9

GRIP ALIGNMENT

GUIDE HAND IS 90 DEGREES TO SHOOTING WRIST

NOTICE THE FIGURE 431 ALL JOINTS AND FINGERS ARE IN THE MAXIMUM POWER POSITION.

SHOOTING WRIST IS 90 DEGREES TO FLOOR

GREEN LINE IS 90 DEGREES TO FLOOR. NOTICE INDEX FINGER (431) IN LINE WITH ELBOW AND SHOULDER. THE JUMP LINE IS IN CENTER OF HOOP. IF YOU IT OPTIMUM STRENGTH, THE MORE THE ELBOW MOVES OUT TO THE RIGHT THE MORE THE WRIST LINE IS A FURTHER PLACEMENT INTO THE AIRWAYS.

have both feet shoulders apart and "toeing" the line is that the shoulders follow the feet and you become more square, thus reducing the possibility of shooting irregularities.

The knee bend prior to shooting the ball is only about 12 centimeters (or 6 inches) or about the width of your shooting hand. No major joints seem to move more than 12 centimeters (or 6 inches) .

GRIP ALIGNMENT

You can actually see a big figure "4" here (photo 9). One adjustment you can make here is the guide arm elbow can move to the left if you feel like creating more space or get the defense to foul you on a jump shot.

The center of the ball is nicely distributed through the center of the hand and wrist joint. You'll be very surprised how many thousands of players don't even have this right. Copy this alignment. Shooting is not about feeling comfortable. Science rules here and it is our duty to create the new scientifically correct mechanism and thus create a whole new feeling action. You are also re-energizing new muscle memory. I was not born with my own shooting mechanism. I totally had to learn and re-fabricate or re-engineer the mechanics so they would abide by scientific and natural laws.

ELBOW MOVEMENT AFTER SHOT

When you have the high (recommended) "shot pocket" near the forehead, it allows you more time for your "radar" to kick in. Watch the good athletes on their jump shots. The ball is high and as well as being more difficult to block it gives you more opportunity to shoot for the "bullseye" or the hoop.

In the photo 10, notice that the elbow angle is pointed at the rim. This will automatically put your "shot pocket right where it needs to be- near the forehead. Once in this position all you need to do is lock all the joints namely the knee, elbow and wrist, only. Less is more here.

As the arm locks at the optimal 45 degree angle to the floor, the actual elbow joint should have only moved about 20 centimeters (6 inches). Test yourself. If you feel uncomfortable it is probably because you are lacking the strength and or your timing is not synchronized with the three main joints (knee, elbow and wrist) which gives you the timing and power you need.

KNEE ACTION AFTER THE SHOT

At the moment the ball is being released the knees and the elbow should be locked or straight. You should hold your follow

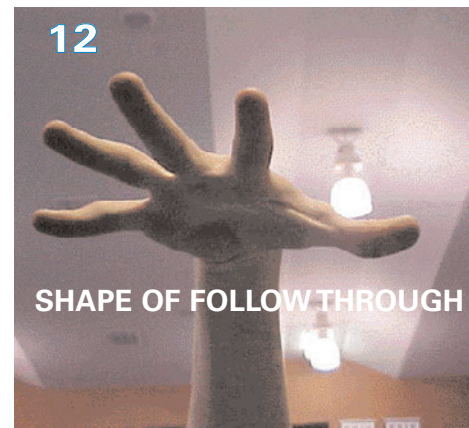
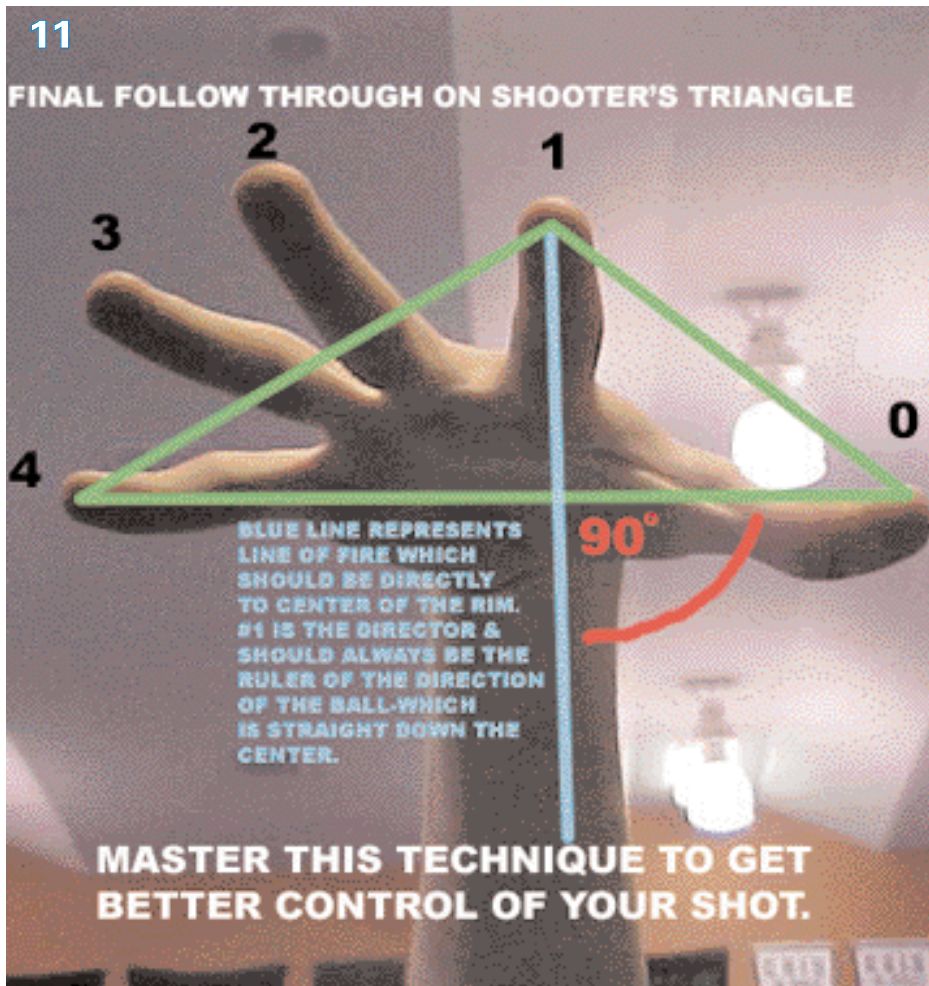
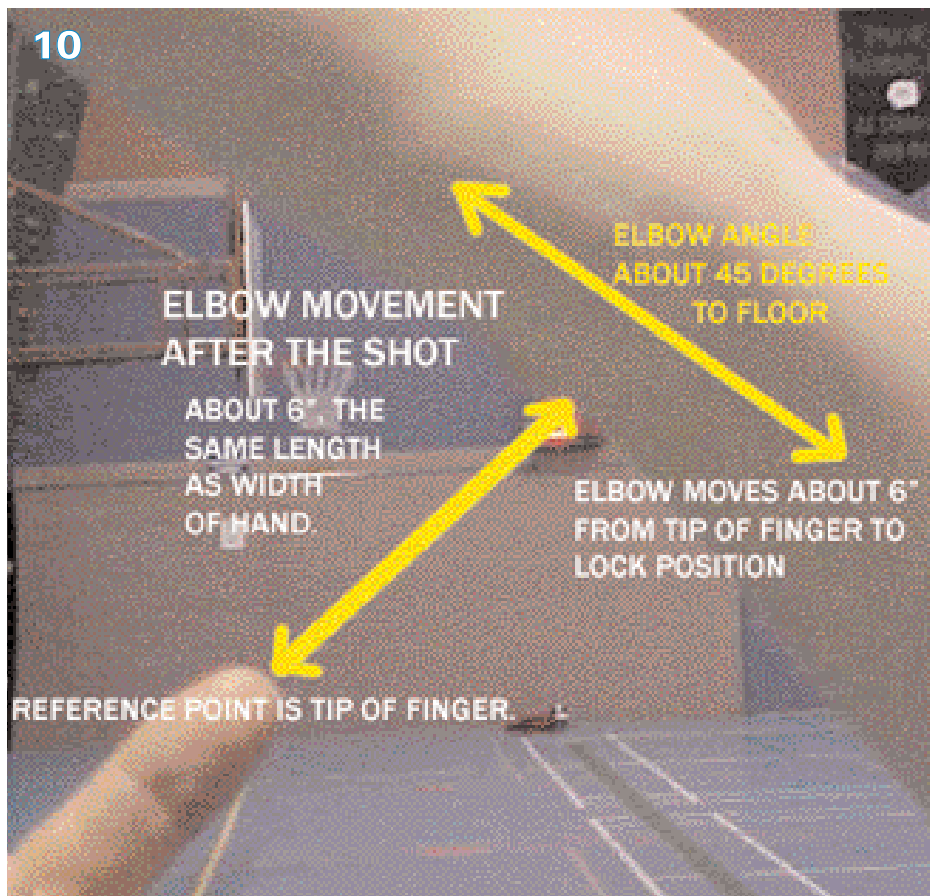
through till the ball goes through the hoop while maintaining a statuesque pose. Your energy should be generated up through the hips and shoulders and not through the forward movement of the arms.

FINAL FOLLOW THROUGH ON "PALUBINSKAS SHOOTER'S TRIANGLE"

The fingers are numbered and notice they are cupped in the shape of the ball (photo 11). If you connect the numbers, they will form a dome shape (exactly like the ball) The hand should stay in this shape before during and after the shot. This seems to be a real difficult task for a lot of shooters for a short period of time. It is a new process that must evolve if improvement is desired.

The blue line must never veer off center line, ever 2 and 3 fingers should never drop below the line drawn between 0 and 4. In fact, the third knuckle on the fingers should never bend.

The only joint that ever moves on this re-engineered follow through is the wrist-joint. This system is highly efficient. It has served me well over the last 20 years. I have been averaging 99% from the free-throw line for the last 20 years in



shooting competitions.
SHAPE OF FOLLOW THROUGH

Here it is important to recognize that the finished follow through has a real shape to it (photo 12). You can call it cupped, domed, circular or round. Whatever way you look at it, it does take on the shape of the ball from where it was just formed, and it must stay this way throughout the shot.

The fingers are all spread comfortably, firm but not stiff, before, during and after the shot. Many players actually move their hand around on the ball after they catch or pick it up especially on free-throws.

This tells me they are looking for comfort

and not specificity.

This takes some discipline and practice to re-educate your muscle memory, but it is well worth the new control that you will feel. Just don't ever let 2 and 3 break at the three joints on the back of the hand (photo 13). If they do they start dominating the shot and you don't want this.

POOR FOLLOW THROUGH

This image shows me extra tension in the finish of the shot. Notice the thumb of the guide hand.

He used the thumb for extra effort to get the ball there (photo 14). This action must be eliminated. The guide hand is only for support of the ball and not to assist the shot or its flight path. This guide hand thumb is a real detriment to shooting accuracy.

Also the shooting hand has completely collapsed. All the 3rd knuckles have bent, the fingers have lost their width and they are all pointing to the floor. The basket is 10' high. You are not shooting at a shadow on the floor. Double jointed players may have a harder time getting control of all their joints due to their genetic makeup. Strength development does help.

