

## THE TERMINOLOGY WE USE

**APPROACH** – Everything that happens on the lane starts from the approach. It has two sets of markers, one at 12' and the other at 15' feet. Bowlers use the boards and dots to line up for their selected line to the pins.

**ASYMMETRICAL WEIGHT BLOCK** – If a weight blocks shape is not symmetrical it is asymmetrical meaning it has an odd shape about it. This type of weight block has an additional weight attached to the main shape. Many of the balls that have asymmetrical shapes are the Ebonite Propeller Core, Storm's RAD Core, Track's Morpheus Core and Columbia's Mallet cores to name a few.

**AVERAGE** – This is the composite score from a number of games bowled in either a league or tournament. Average can be a measure of a bowler's skill level.

**AXIS LINE** - The term axis line describes the imaginary line running from the bowlers track through the centre of the grip, and around the whole ball.

**AXIS POINT** - The axis point refers to the two points on the axis line that the ball would rotate around, this is also determined from the bowlers track. There is always a positive and a negative axis point. We refer mainly to the positive axis point which is called the PAP.

**BACKENDS** - The back-ends are regarded as the point on the lane that the ball starts to react, also called the breakpoint. This part of the lane has no conditioner on it at the start, but can have some carry down of oil after a few games.

**BACKUP BALL** – Opposite of a hook ball, the ball turns to the right for a RH bowler and to the left for a LH bowler.

**BALANCE HOLE** - You are allowed an extra hole drilled into the ball to bring the

ball to legal balance. The hole size is not to exceed 1 ¼" in diameter, including bevel.

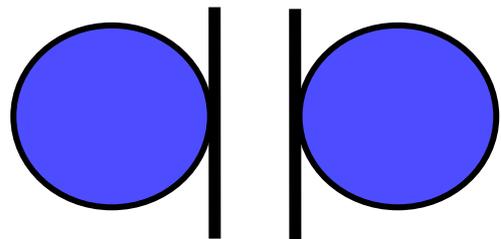
**BALL TRACK** - This is the portion of the ball that comes in contact with the lane. It is best seen as the area which has the oil rings. A ball with a worn out ball track will need resurfacing.

**BEVELS** - The shaping of the holes after drilling a bowling ball.

**BOARDS** – The lines on the lane are called boards, because each spacing between two lines is a board in width. Most lanes have between 39 – 41 boards. Synthetic lanes have a photo imprint of boards.

**BREAKPOINT** - The point at which, the ball transcends from a skid / roll to a hook, or a defined turn or curve.

**BRIDGE** - The area between the finger holes. This is in fact the weakest point on the ball, and can be subject to cracking if too small. Recommended width for a conventional grip is 5/16 - 1/2" (7 – 12mm) and for a fingertip grip 1/4 – 3/8" (6.5 – 9.5mm) depending on hand size.



**BUCKET** – Word used to describe a cluster of pins together, like the 2 – 4 – 5 – 8 pins, or the 3 – 5 – 6 – 9 pins.

**CARRY** – All bowlers mention it when they talk about their game. “If only I could carry” or “I carried really well today” is spoken about often after a game. A term used to describe whether the pins would or wouldn't fall for them!!

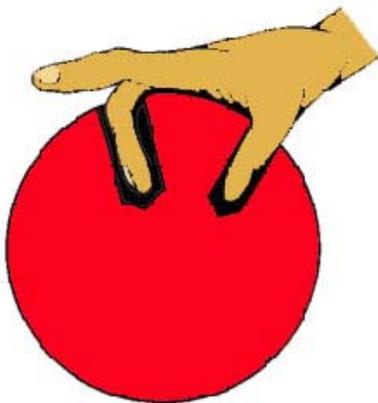
**CARRY-DOWN** – Often bowlers mention there is some carry-down on the backend. This is an indication that the lane oil has

been picked up on the ball and carried towards the pins, creating a hold area when the ball has been bowled down a specific line. Carry-down can cause some balls to lose their hitting power, and others may relish the hold to enable the ball to not lose its power too soon.

**CONDITIONER** – Lane conditioner is what is applied to the lane by a machine or by hand. The main purpose of lane conditioner is to protect the lane surface from the friction of the bowling ball, and secondly to help the ball path and reaction. In Australia TBA has a lane conditioning policy for all nationally ranked events.

**CENTER OF GRAVITY (CG)** - Is the heaviest point on the ball which is defined by a small punch mark or design. Each manufacturer has specific markings that define where the CG is located.

**CONVENTIONAL GRIP** - Standard grip for a beginner bowler, where the fingers are inserted to the second knuckle and the thumb is inserted all the way to the base.

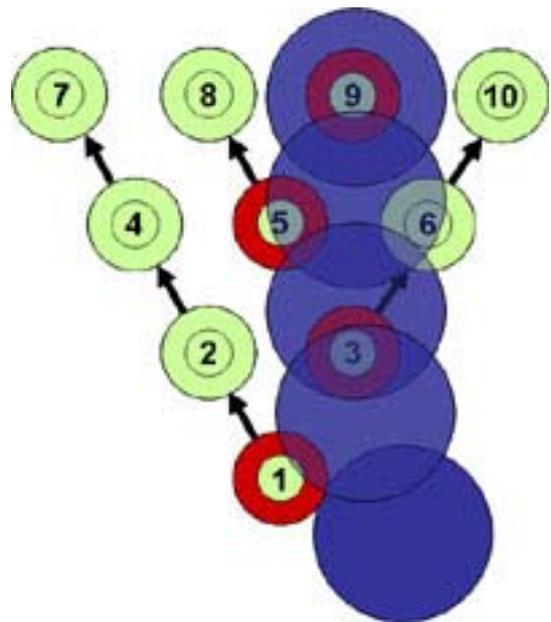


**COVERSTOCK** - The cover or shell of the ball, also called veneer. It is one of the most important parts of ball reaction, and the first thing you need to change to create a different reaction.

**DEAD WOOD** - Pins that have been knocked down.

**DEAD BALL** – A ball that is out of play, in the gutter or has been delivered after a foul has been committed.

**DEFLECTION** – The ball and pins both deflect from each other to create pinfall in a Perfect Strike. If the ball hits the pocket for a RH bowler, the ball will only hit the 1–3–5–9 pins, for a LH bowler the ball would hit the 1–2–5–8 pins. In general the ball only hits four (4) pins, the rest fall because of deflection.



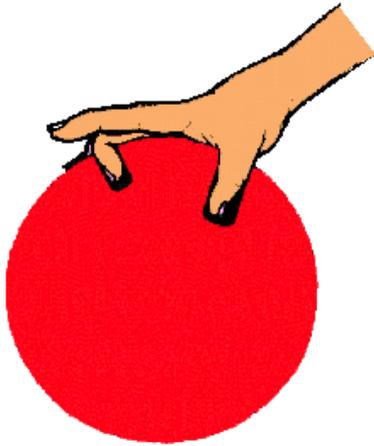
**DELIVERY** – The release and follow-through is called the delivery.

**DIFFERENTIAL (Diff)** – Differential is the difference between two RG's low and high. Differential is one of the causes of track flare, as well as bowler release and weight block position. Generally low differential balls flare less whilst high differential balls have the most flare potential. When manufacturing the ball the maximum allowed is 0.060.

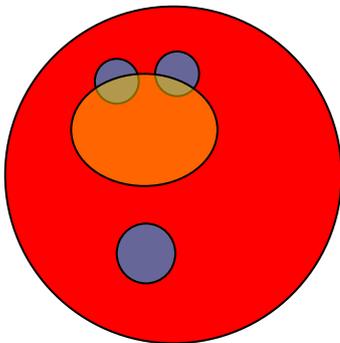
**ETIQUETTE** – This is the unwritten code of behavior expected of bowlers whilst participating in the bowling environment.

**FILLER MATERIAL (CORE)** - The material used in the manufacture of balls to create the overall weight. In light weight balls foam is often used.

**FINGERTIP GRIP** - This is the most common grip for all better bowlers. The fingers are inserted to the first knuckle, and the thumb is inserted to the base. This is the best span for creating a hook ball.



**FINGER WEIGHT** - Finger weight gives the ball a longer skid, and is created by drilling the ball in a position where the mass of the weight block is more towards the fingers. A maximum of 1 ounce (28g) is allowed for balls weighing 10lbs or more. Balls that weigh under 10lbs have a maximum of 3/4 ounce (21g).



**FOLLOW-THROUGH** – Is the continuation of the swing after the ball has been released. A good follow-through should at least end at shoulder height to be effective.

**FORWARD ROLL** – As the ball transfers from a skid (side roll), it will then migrate to a forward roll. This is the ideal roll on the ball as it reaches the pins (just before roll-out). However a ball with too much forward roll will roll out and hit weak.

**FOUL** – Occurs after the ball has been delivered onto the lane, and a part of the bowler's body touches a part of the lane or wall beyond the foul line. No pinfall is allowed when a foul occurs.

**FRAME** – A frame is one of ten which are part of a game of tenpin bowling, a bowler has the opportunity to have two deliveries to knock down all ten pins.

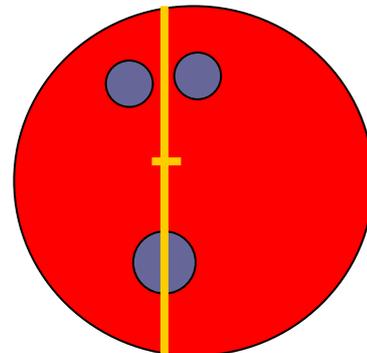
1	2	3	4	5	6	7	8	9	10
X	X	X	8/	7/1	9/	F8	8	F/9/	X
30	58	78	95	103	113	121	129	148	168

**FUNDAMENTALS** - To have good technique, a bowler should have sound fundamentals, meaning good setup, swing, timing, balance, release, follow-through etc.

**FULL ROLLER** - The term used to identify a bowler who releases the ball with a clockwise action, and still maintains a hook ball delivery. The track on the ball rolls between the fingers and the thumb, and sometimes hitting the fingers and thumb. The full roller delivery is not as common as it was prior to the mid 1980's.

**GRIP** – The process of holding the ball on the hand is called the grip, ideally there should be minimal pressure used in holding the ball.

**GRIP CENTRE** - This is the line separating the right from the left side, and the finger from the thumb side, with the center obviously being the grip center. This is the line that is used when weighing the ball for balance.



**HEADS** - The area of the lane starting at the foul line and finishing at the splice just past the arrows. If it is a wooden lane, this area is made of a hard maple wood, used because of its ability to withstand constant pounding. It is also the area that has the most conditioner applied to it.

**HOLE SIZE** - The size of the holes drilled into the ball.

**HOOK BOWLER** - A bowler whose release enables them to create a ball roll that has a significant turn on the lane.

**INSIDE LINE** – Target at the arrows between the 13 - 17 boards.

**INSERTS** – Mainly used for bowlers with a finger-tip grip, the inserts are made of a soft rubber type compound and are shaped to the finger, which include oval, round or with a lip for extra lift, as well as some that have a textured feel.

**LABEL DRILLING** - When the ball is drilled over the label, the grip center can be within 1" inch (24.4mm) of the center of gravity either way, up or down or side to side, as long as there is no balance hole.

**LANE SURFACE** – Lanes can be made of wood with maple in the heads and pine in the midlane and maple or synthetic pindecks, wooden lanes are naturally softer and will create an earlier roll. Lanes can also be made of a synthetic material similar to a decorative laminate like a kitchen top, very hard and durable. Synthetic lanes will generally have a longer skid when conditioned similarly. Other types of lane surfaces that are found are Guardian and Lane Shield.

Understand more about lanes by visiting <http://www.foundation300.com>

**LEVERAGE DRILLING** - This is the drilling where you place the pin 3 3/8" inches (8.75cm) from the PAP (positive axis point). This is the most unstable of all drillings,

therefore creating the most flare and potential hook.

**LIFT** – Is imparted by the fingers to create revolutions, this is caused by having a consistent finger pressure during the swing and release.

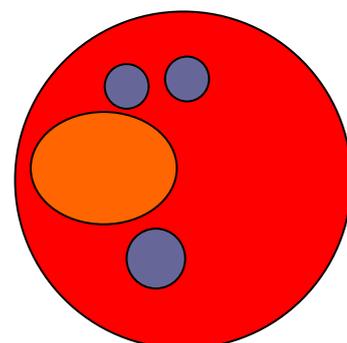
**LINE BOWLING** – A bowler draws an imaginary line from the shoulder, foul-line or other target or point on the lane to the breakpoint down the lane. Many bowlers use this method for lining up to a target rather than using a specific target on the lane.

**LOFT** – When the ball releases from the hand in an upward direction, this is called loft. Lofting the ball onto the lane has little advantage in ball reaction.

**LOSER** – Someone who takes more than they give. Who holds back instead of giving 100%. Who makes excuses for failure rather than look for solutions? A loser is a person that blames everything else but them. ARE YOU A LOSER OR A WINNER

**MASS BIAS** – A ball that has a mass bias is also possibly an asymmetrical ball, in that it has an additional weight positioned away from the geometric centre of the weight block. This weight can be influential in providing a more stable spin axis as the ball travels towards the pins. Different manufacturers have various names for a mass bias, RAD, Bomb, HOT etc.

**NEGATIVE SIDE WEIGHTS** - A term used to describe the negative imbalance in the ball. This is referred to the way the ball has been mapped out, in relation to the grip center. Negative weight promotes an earlier roll. A maximum of 1 ounce (28g) is allowed. (All drawings are for a RH bowler)



**NSO (National Sporting Organisation) –** A group of people that administer the sport's rules, regulations etc. See TBA.

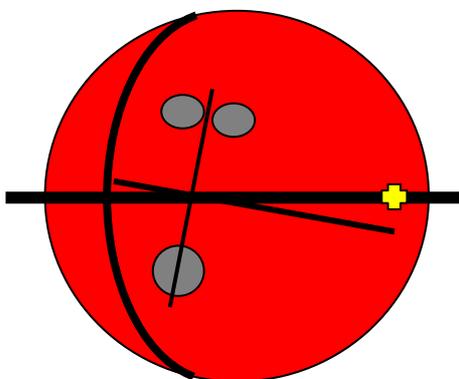
**OUTSIDE LINE** - Is located between the 3 – 7 boards.

**OPEN FRAME** – Missing a spare and leaving the frame open.

**PARTICLE COVERSTOCK** – The newest technology over the past few years has been in the coverstock, particle balls were first released in the late 90's with the Brunswick ProActive™ series of balls. The initial releases were difficult to resurface and maintain, however the latest developments are far more user friendly and are a great ball to have in any arsenal. Just about every major ball company has a particle ball in the range.

**PATHWAY** – Career direction for an athlete, coach or official. Check out the high performance section on the TBA website for details of those pathways.  
<http://www.tenpin.org.au>

**POSITIVE AXIS POINT (PAP)** - All bowling balls when bowled rotate on an axis; there is a positive & negative axis point. The position of the positive axis point is determined from the bowler track, and measured from the grip center, across and up or down.  
(Diagram below is of a right handed bowler with a semi roller track)



**PIN** - Usually made from plastic or urethane, this is the stem of the weight block. In the manufacturing process the

stem is used to position the weight block in the mould.

**PINES** - The area on the lane after the heads, this is the area on a wooden lane that allows the ball to roll.

**PINFALL** – The number of pins knocked down in a frame, game, series or entire event.

**PINSPOTTER** – The automatic pinspotting machine that returns the ball back to the bowler, and sets up pins after the first ball. The first one was built in the 50's by AMF.

**PIT** – The area beyond the pin-deck that allows the pins and ball to be returned by the automatic pinspotting machine.

**PITCHES** - Describes the angle at which the holes are drilled into the ball, with all references being made to the center of the ball. The five pitches the holes are drilled at are zero, forward, reverse, left lateral or right lateral.

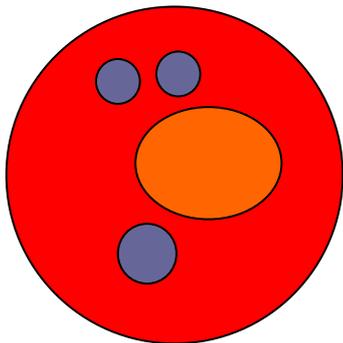
**POCKET** – The area located between the 1 & 3 pins for a RH bowler and the 1& 2 pins for a LH bowler.

**POINT OF ORIGIN** – The starting distance on the approach for the stance.

**POLYESTER** - A specific type of coverstock also referred to as plastic, first made in 1960. Almost all balls start off using polyester as the main ingredient in making a ball. Polyester has the least amount of friction, and is best suited for beginner bowlers, as a spare ball, or for drier lane conditions. Ebonite's Maxims & Columbia's White Dots are the most popular.

**POSITIVE SIDE WEIGHT** - A term used to describe the positive imbalance in the ball. This is referred to the way the ball has been mapped out in relation to the grip center. In general terms positive weight promotes a longer skid and a greater hook.

A maximum of 1 ounce (28g) side weight is allowed in a ball 10 lb or more. (The diagram below shows a RH hook bowler)



**PRESHOT ROUTINE** – All athletes have a preparation they use before they execute an athlete movement used in their relevant sport, tenpin bowlers are no different. All bowlers should have a systematic routine they use each time they prepare to deliver the ball.

**PROSHOP** – The proshop operator today is more knowledgeable than ever before. This is the best place to purchase equipment and get advice, and take advantage of the personal services relative to our sport. TBA has an accredited Level 1 Ball Drilling Course available for people looking to become proshop operators. It is available anywhere in Australia and New Zealand; enquiries can be made through this website for the next available course.

**RADIUS OF GYRATION (RG)** – General rule regarding RG is that low RG balls rev up faster because the mass is positioned closer to the middle of the core. High RG balls are harder to rev because the mass is further from the middle, high RG balls tend to travel longer.

**REACTIVE RESIN** - This material has been modified from polyester or urethane. The material used to make reactive resin coverstocks has internal pores that help absorb oil, they generally have a tacky feel and create more friction and hook on the lane than polyester or urethane bowling balls. Most of the new balls on the market today are reactive resin. Reactive resin

bowling balls originally came out in 1992, with the introduction of the Nu-line Excalibur.

**RELEASE** – The release of the ball at the foul line, when the ball exits the hand and is landed on the lane. In a standard release the thumb exits the ball first, followed by the fingers which impart a turn or rotation. The ball should then land on the lane smoothly, with the right amount of side roll, speed and rotation to create good pin action and carry.

**REVOLUTIONS** – The number of times a ball rotates around an axis as it heads towards the pins. The more revolutions (revs) a bowler creates, the greater the potential energy at the breakpoint. However too many revs on light oil conditions can be detrimental to accuracy.

**RESURFACE** – When a ball has a worn out track area, the ball loses the ability to slide and roll effectively. The ball may be due for a resurface of the coverstock or shell. This is achieved with the use of a ball spinner and wet / dry sand-paper. The process may involve using several grits of sand-paper till the original surface is restored. In general a ball should be resurfaced periodically to maintain a good surface.



**ROTATION** – The horizontal axis of the ball as it travels down the lane, called axis of rotation. Bowlers that release the ball from the back of the ball create a great deal of forward roll and have somewhere between 15 – 20 degrees of AOR. Bowlers that come around the ball at release create around 60 – 90 degrees of AOR. The most common is somewhere in the middle. In general the higher the AOR the more skid and greater backend reaction, the less AOR the earlier the ball rolls.

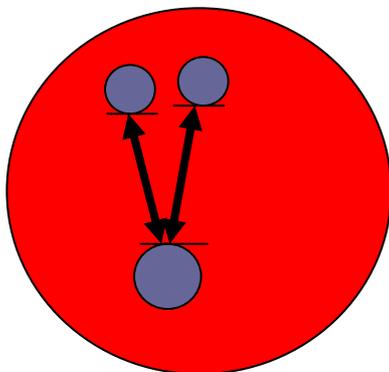
**RUBBER** - This is the coverstock used on bowling balls for the first 80 years of the 20th century. These balls were usually referred to as hard or soft rubber. There are no ball companies manufacturing rubber bowling balls today.

**SEMI – FINGERTIP GRIP** - This grip type has the fingers inserted between the first and second knuckle. The thumb is inserted to the base.

**SEMI ROLLER** - Also once known as the  $\frac{3}{4}$  roller, this refers to a ball track which is to the side of the fingers and thumb. This is a preferred ball track for most bowlers.

**SOLIDS** – These are used to provide a smooth release and feel for mainly the thumbhole, but is available for fingers also. There are many types of thumb solids available today, various sizes, colours and hardness, the main types being vinyl and urethane.

**SPAN** - This is the distance from the edge of the thumb hole to the front edge of the fingers.

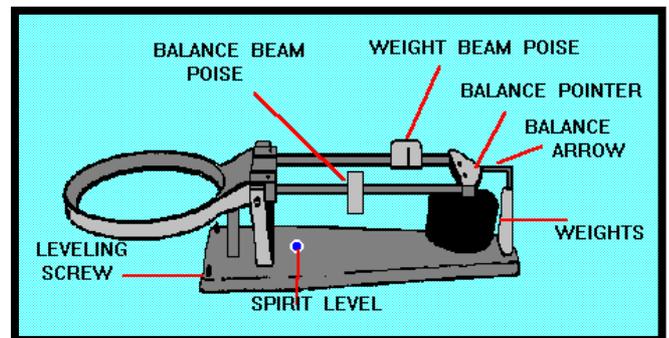


**SPARE** – The knocking down of the balance of pins on the second shot of a frame. A spare equals 10 pins plus the number of pins knocked down on the next delivery.

**SPINNER** - A ball track that is very small in diameter, bowlers who overturn the ball can create a low track. This type of ball roll develops a great deal of skid, and is not very effective on oily lane conditions. Work's well on drier or lighter oil conditions. While we mainly describe a low track

bowler, the extreme is the spinners from Asia who have a high tilt and a ball track a bit larger than a 50 cent coin.

**STATIC BALANCE** - The term used to find the difference between the two equal parts of the ball. The use of a Static Beam Balance Scale (Do Do Scale) is essential.



**STANCE** – The position a bowler takes in preparing to deliver the ball.

**STRIKE BALL** – The knocking down of all ten pins on the first ball. A strike equals 10 pins plus the number of pins knocked down on the next 2 deliveries.

**STRAIGHT BOWLER** - A bowler that has minimal turn or hook, this can be created from minimal hand action, a broken wrist position, fast ball speed, etc. A straight bowler needs to create a greater angle to achieve a more desirable pin reaction.

**STROKER** - Term used to describe a bowler who has average ball speed and a moderate hand action at the release point. The strokers timing at the foul line has moderate to no leverage. The release and delivery can have a great deal of hook; however it is minimal in comparison to a power player. The stroker is classified as being the smoothest of all styles.

**SYMMETRICAL WEIGHT BLOCK** – The shape of the weight block is even on all sides, if we were to observe the weight block from the top it would look like a circle.

**TARGET** - An arrow, spot or board used for aiming on the lane surface. Target arrows are the seven dart like markings 15' feet from the foul line, each arrow is located 5

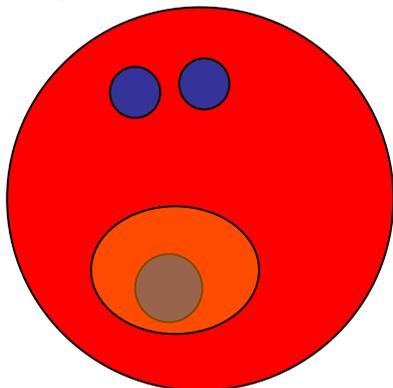
boards apart. Another target used for aiming is the set of dots located 7' feet from the foul line, positioned on boards 3, 5, 8, 11 and 14 from the gutter.

**TBA (Tenpin Bowling Australia) –** Australia's National Sporting Organisation for Tenpin Bowling. TBA's role is to govern the sport, foster and promote the sport of tenpin bowling, as well as many other common duties of an NSO. More information about what TBA does for the bowling community can be found by visiting their website at <http://www.tenpin.org.au>

**THREE PIECE BALL -** The most common of all ball types comprising of a coverstock, filler material and a pancake / puddle weight block. House balls mostly polyester, and some lesser priced urethane and reactive resin balls are 3 piece bowling balls. The high RG characteristics of these balls make them most suitable for beginner bowlers, light oil lane conditions, or used as a spare ball.



**THUMB WEIGHT -** Describes a weight that is more towards the thumb side of the ball. Thumb weight promotes an earlier roll of the ball in general. A maximum of 1 ounce (28g) thumb weight is allowed in a ball over 10lb after drilling.

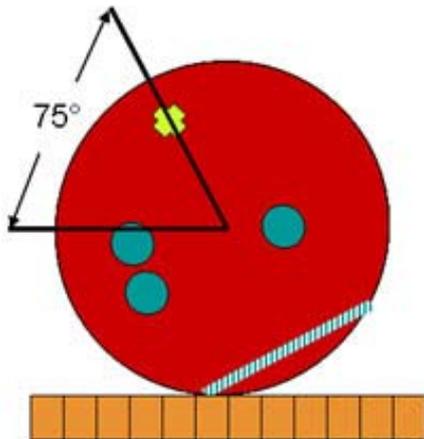
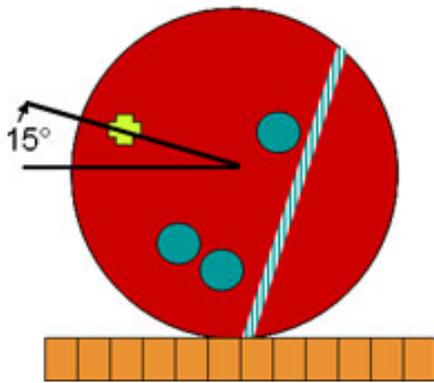


**TENPIN COACHING NETWORK –** For the past few years in Australia the TBA Coaching Program has been building and has undergone several changes. There is now a one day Bowling Proficiency Certificate available to all bowlers, which is a pre-requisite to the Level 1 Coaching Course. The Level 1 & 2 Coaches Program has been updated, pre-requisites and standards introduced for all the levels. The HP Coaching Manager and the coaches' network are working towards introducing in time a Level 3 Course.

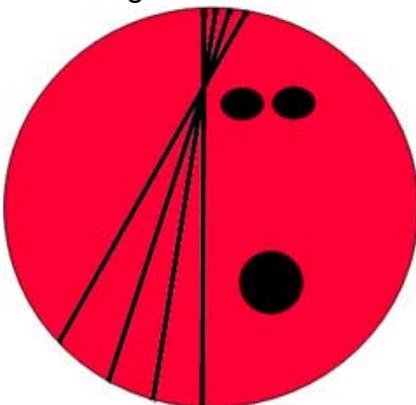
For advanced Level 2 coaches who work with High Performance athletes, there is now a High Performance 1 & 2 Course available, and these new coaches in the HP Program participate in a week long camp each year, giving them the opportunity to network and discuss, workshop and create programs with the best coaches in the country. Today there is an established and excellent network of coaches throughout all states of Australia who work with other coaches to produce programs, working with centers and proprietors to introduce coaching programs to everyone.

For more information on how you can become an accredited coach, contact your TBA State Coaching coordinator, details are available on the TBA Website at <http://www.tenpin.org.au>

**TILT –** Axis tilt is the vertical angle at which the ball rotates. Axis tilt is also known as spin. Axis tilt is determined by the location of the thumb at the release. If the hand turns too early, the thumb exits on top of the ball called topping the ball. Bowlers with a high degree of axis tilt will be able to see the top of their hand during the release and follow through. Being able to have the thumb exit at the bottom of the down swing minimizes axis tilt. Axis tilt will induce skid and reduce the amount of backend hook potential. With the core rotating in a more vertical fashion, oily lanes will be the enemy, drier lanes its friend. Bowlers that have little axis tilt create an earlier roll, better for conditions with more oil.



**TRACK FLARE** - A ball that has been drilled with an unstable weight block can create several small oil rings around the ball track. Flare is considered to be an advantage when bowling on oilier lanes, because each revolution of the ball will find a new part of the ball to track on, creating more traction. Higher differential balls have the potential to create a larger flare, and have a wider gap between the rings, whilst lower differential balls have a narrower gap between the rings.

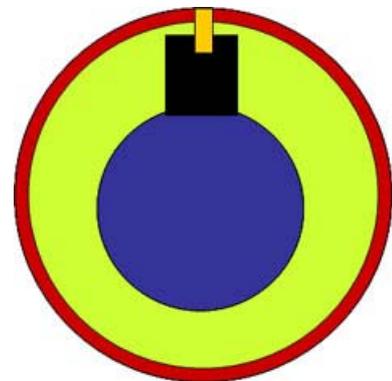


**TRACK SHOT** – The track shot in bowling is between the 8 – 12 boards, the second

arrow. This is the most common of all lines a bowler uses.

**URETHANE** - A coverstock material developed from polymers similar to polyester; however urethane is a much harder and durable surface than polyester. Urethane is also non porous but has a higher level of friction than polyester, but not as much as reactive resin urethanes, which have the highest friction level. There are few urethane bowling balls produced today, but they still play a significant roll in today's game. The first urethane ball was the AMF Black Angle in 1981.

**WEIGHT BLOCK** - The denser inner portion of the bowling ball; There are two, three, four or multi piece weight blocks today. They are referred to as symmetrical and asymmetrical, as well as top or bottom heavy, center or cover heavy. Basically they are a weight within a ball that influences ball roll and reaction. Placing the weight block in specific positions relative to the bowlers PAP will create a variety of reactions.



**WET LANES** – The term is used to describe the amount of conditioner on the lane surface. Wet meaning the ball is traveling a long distance before hooking. This can also mean that the ball will not hook at all, which may mean there is some carry down. (See carry-down for more info)

**XXXXXXXXXXXX** – Is the string of strikes every bowler strives to see on their scorecard. Learning more about the game will only improve your chances of achieving that goal.