
BOWL DELIVERY – TECHNICAL BASICS

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Basic Technique

Preliminary Skills

Protection of the Green

To protect the surface of the green, bowlers should:

- wear approved smooth-soled footwear
- avoid sitting on the edge of the bank, or otherwise submitting the green near the edge of the ditch to foot pressure.
- avoid placing bags on the green surface to pack or unpack bowls.
- release their bowls close to the green surface (i.e. avoid 'dumping' of their bowls)

'Kicking' Bowls

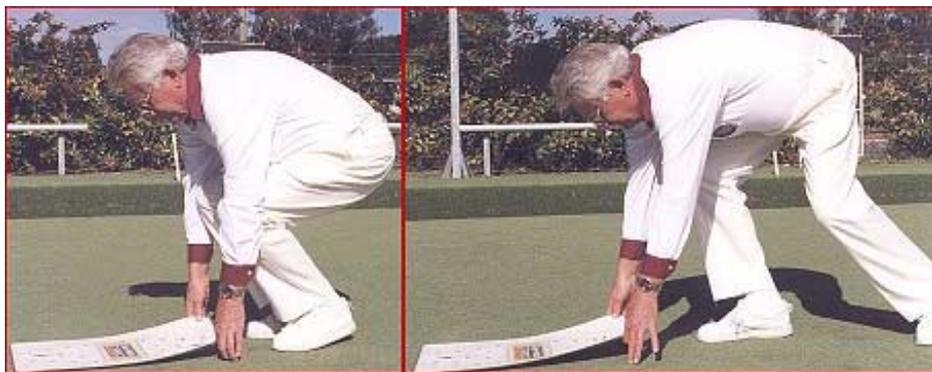
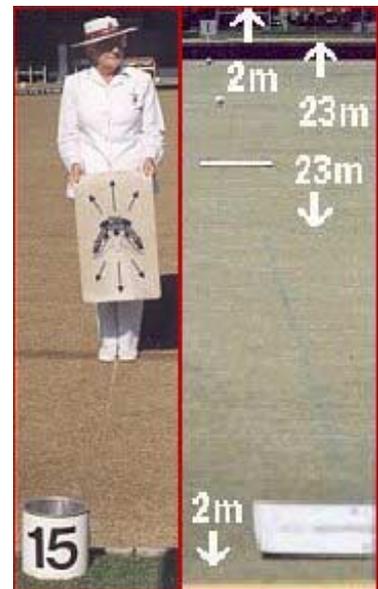
Once the mat is in position, players can 'kick' bowls to a collection area safely to the rear of it. Kicking is the act of moving a bowl with the sole of a shoe so that it rolls a short distance. A bowler places the instep of the sole lightly on the bowl and either drags it backward, whereby the point of contact moves towards the toe, or rolls it forward, whereby the point of contact moves towards the heel. This method of kicking avoids discolouration of either shoes or bowls by transfer of polish.

Placing a Mat

The mat provides a base for delivering the jack and bowls. It provides some protection against local wear and tear of the green surface. Its front edge (or 'mat line') provides a mark for measuring distances to bowls, to the jack, or to a ditch, as necessary.

The skips decide which team will begin play by tossing a coin. To place the mat, lead players should face the rink number over the rear ditch as shown in the adjacent image on the left. This ensures that if there is no rink centre line, or there is more than one marked line, that they correctly centre the mat lengthwise on the rink.

The lead player places the mat aligned with the centre line of the rink, and with its front edge at least 2 metres from the rear ditch and at least 23 metres from the front ditch. White markers on the side bank indicate the latter alignment. The adjacent image on the right shows a mat 2 metres from the rear ditch, and a second mat level with the markers on the side banks. The nearer jack shown is 23 metres from the rear ditch, and the farther jack is 2 metres from the front ditch...



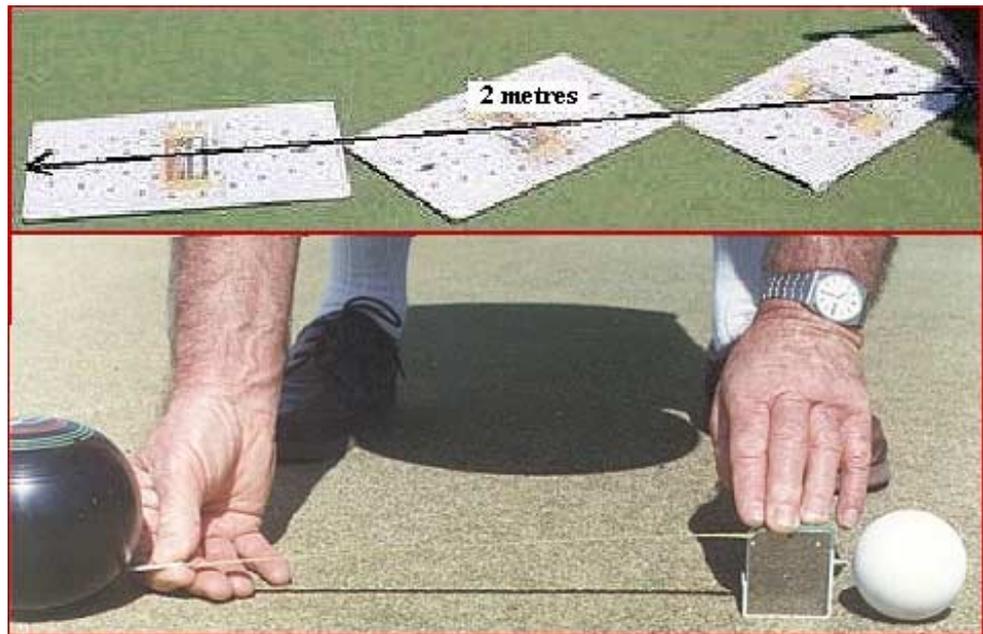
Typically, lead players pick up the mat by the corners of a short side. They then either crouch down, or step forward and genuflect downward to place the mat comfortably and precisely, as the images above show.

The upper picture in the following image demonstrates that a distance of two metres is equal to the total length of two mat diagonals plus one mat length

Following a tied or dead end, the team that was first to play in the previous end again plays first. Players may not relocate the mat during an end, but may straighten it, or temporarily lift it to allow a bowl from an adjacent rink to pass.

Measuring

Measuring to determine the result of an end is allowable after the last bowl has come to rest. Measuring commonly occurs where there is uncertainty about which team has the shot or how many shots a team is entitled to count. Relevant distances are from a point on each bowl that is nearest to the jack to a point on the jack that is nearest to the corresponding bowl. (The method pictured the lower picture in the image above is incorrect. The



tape case is not in contact with the jack, and the end of the tape contacts the bowl beyond its closest point.)

Because measurements are relative, the measuring device need not be calibrated. A measuring device should be a non-elastic object of adjustable length for determining relative distances between the jack and bowls. Popular personal measuring devices include retractable metal tapes and telescopic rods. Metal tapes commonly encase small callipers that are useful for measuring distances so short that there is insufficient separation for use of a tape or telescopic measure. Some measuring devices have locks to temporarily fix their settings.

Bowl Grips

Jack Grip

The best grip for a jack is one where it rests on the closed finger tips with the thumb tip near its crown and applying enough gentle pressure to keep the jack secure. In this grip, the jack is well clear of the palm of the hand and can release cleanly off the tip of the middle finger. The picture on the left in the adjacent image shows this grip.

The picture on the right shows a cupped or clenched grip, which palms the jack and tends to negate the benefit of the tactile sensitivity of the fingertips.



Awkward positioning or movement of the fingers tends to inhibit a clean jack release.

Bowl Grips

A bowl is about twice the diameter and six times the weight of a jack. Unlike a jack, a bowl is not spherical. However, the planes of the running surface and the engraved coaxial rings of the bowl are circular. An essential feature of any bowl grip is that the running plane should be erect and aligned with the forearm and the intended delivery line at the instant of release. To avoid a wobbly delivery and 'standing up' of the bowl, players should use a grip that does not allow the bowl to skew or tilt. The picture on the left of the adjacent image shows a right-handed grip that skews the bowl to the left and tilts it to the right.



An essential feature of a sound grip is that the tip of the middle finger should position under the running plane as the picture on the right shows.

With the engraved rings upright and aligned, and the middle finger tip correctly positioned, propelling force should transmit through the centre of the bowl until its release, and no wobble should occur. A wobbling bowl is not likely to come to rest at its intended position.



When in course, a bowl slowly changes direction towards its biased side. The biased side of a bowl is recognisable by the smaller engraved ring and insignia than their counterparts on the unbiased side. The image above illustrates a typical difference in the appearance of side engravings of bowls.

A bowler has a backhand grip when holding a bowl with the thumb on the biased side. Consequently, the bowler has a forehand grip when holding a bowl with the thumb on the unbiased side.



A suitable grip sometimes results by first stationing a bowl upright on the playing surface. If a bowler then picks it up from behind with the tip of the middle finger centred, the grip used is often a suitable and comfortable one for bowl delivery.

The 'finger' tip grip provides good 'touch' for playing on medium or fast greens, and is probably the most popular grip. For the finger grip, the slightly separated finger tips support the bowl with the thumb tip near the crest of the large engraved ring and applying enough gentle pressure to secure the bowl. The preceding images show the features of an effective finger grip.



Most other grips involve some degree of 'palming' of the bowl. The 'claw' grip (opposite, left) has the tips of the thumb and little finger in (diametric) opposition, with other fingertips slightly more separated than in a finger grip.

It is a secure grip for fast shots and for play on slow greens. In a 'cradle' grip (above, right), the tip of the thumb adopts a low position on the side of the bowl.

When the hand inverts, as in a normal back swing, the bowl tends to escape from a cradle grip. The few bowlers who use it usually do so because of small hands or lack of finger strength. The palm supports much of the weight of the bowl. To prevent the bowl escaping, a bowler using the cradle tends to articulate the wrist in the back swing to keep the hand under the bowl. The delivery is more a 'shovelling' than a 'swinging' action.

Delivery Stances

Set Up

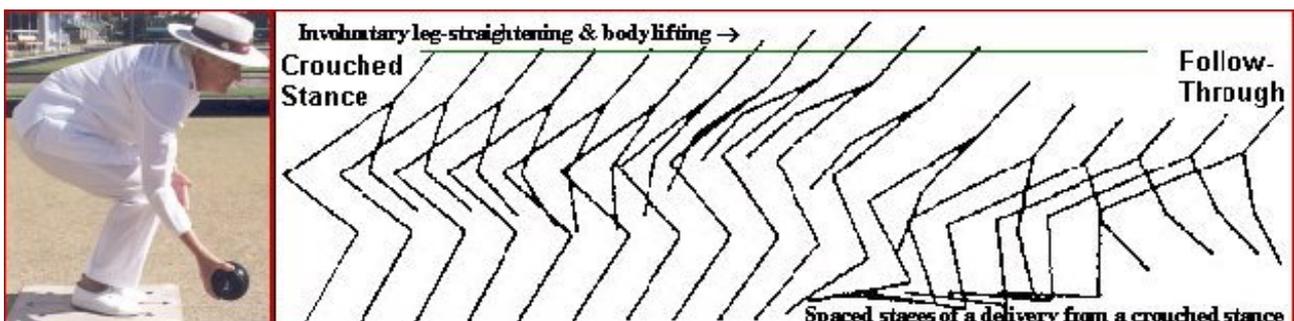
The set up or stance is the posture that a bowler adopts before beginning the delivery action. Bowlers prepare for delivery by anatomically aligning in the direction of delivery. Their sensory feedback and visual feedback thereby mutually reinforce to help maintain accurate delivery line. They also take care to align their feet in that direction

The critical posture is the one at the instant of bowl release. Some bowlers prepare for delivery by adopting the release posture at the outset. This produces a 'fixed' stance. However, most bowlers use an 'upright', 'athletic' or 'moving' stance. They rhythmically move into the release posture during the delivery movement. The term 'clinic' refers to a variant of the upright stance. It seems most popular with bowlers in New Zealand and South Africa. For the clinic, the leading foot advances about half a pace in the set up, or stance (as in the adjacent image), and advances the remainder of one pace during the delivery movement. Using the 'athletic' or 'moving' stance, the leading foot advances the full pace during the delivery movement. One advantage of setting up with the leading foot partially or wholly advanced is that it enables pre-emptive adjustment or 'fine tuning' of line before delivery begins.



The erect posture of an upright stance provides a good perspective view of the head. It avoids leg joint stress during preparations. An upright stance enables bowlers to apply some body momentum to augment the forces that produce bowl release speed. From the 'set' position in the fixed stance, only the arm moves and provides dynamic force.

A somewhat defective form of the athletic or moving stance is the 'crouch', which is a posture like the one in the left picture in the image above. Bowlers should avoid crouching and consequent stress on both knee joints. A free step from a crouch is virtually impossible. The knee joint of the opposite leg would bear extreme stress. A crouching stance necessitates some straightening of the legs and lifting of the body during the delivery movement so that the leading foot can advance without overstressing of the opposite knee joint occurring...



This lifting tends to have the incidental effect of moving body weight back from the balls of the feet to the heels. None of this extraneous movement contributes to simple and accurate delivery of bowls.

Foot Positioning

Bowlers typically begin preparation with feet parallel (unless using the 'clinic' method described above) and adjacent to one another. The next image shows the broad options for foot positioning. The ideal anchor foot position for delivery of a jack or bowl is with the toe about 10 cm behind the mat line. The centre of the heel should position on (left picture) or inside (right picture) the longer centre line of the mat with the toe directed towards the aiming point. The ideal leading foot position is parallel with but slightly separated from the anchor foot. For a fixed stance, bowlers advance the leading foot a normal pace and complete their delivery preparation with feet in that position. The 'anchor' foot remains within the confines of the mat during delivery and is normally the foot on the delivery arm side. It commonly remains in contact with the mat and thereby helps in sustaining a bowler's mental imprint of intended aiming line.

Because jacks are unbiased, bowlers deliver them directly towards the intended stopping point. A jack should travel parallel to the rink centre line. The line of delivery of a jack is not as critical as that of a bowl. Provided the jack comes to rest within the rink boundaries, a player repositions it on the rink centre line before play proceeds. If a rink has a marked centre line, the possibility of using it as a de facto delivery line arises. A bowler may or not be able to deliver a jack along the centre line comfortably. If cramped, a bowler might find that moving the instep of the anchor foot towards the inside edge of the mat (as in the picture on the right) enables comfortable use of the rink centre line as a delivery line.



Biased bowls follow a curved path, so bowlers deliver them at an angle to the alignment of the intended stopping point. A delivery towards the same side of the rink as the bowler's delivery arm is a forehand. A delivery towards the opposite side of the rink is a backhand. The only differences between forehands and backhands are the direction of the bias of the bowl in the hand and the bowler's initial body alignment relative to the aiming direction.

Footfaulting On Mat Line

Players who position their feet almost touching the mat line commonly foot fault. At the instant of delivery, the leverage of the horizontal trailing leg causes the shoe to flex. The back of the shoe might then not only overhang the toe but also overhang the mat line, thereby creating a foot fault. To avoid the distracting



attention of umpires, bowlers should avoid foot positioning that risks rule infringement. Bowlers should position the toe of the trailing foot approximately 10 cm behind the mat line. There it is far enough forward to ensure that the heel of the leading foot will always clear the mat, and it is far enough back to avoid any risk of foot-faulting. The centre of the heel of the trailing foot should be above the mat centre line.

Weight Distribution

In taking their stance, bowlers should slightly flex their knees and incline their trunk to position body weight over the balls of the feet. They should be poised, ready for forward movement. For a fixed stance, bowlers should position the knee of the trailing leg near the heel of the leading foot. They should advance body weight over the sole of the leading foot. That posture should put the front knee ahead of the toe, and the chin ahead of the knee.



Delivery Arm

The 'delivery' arm is the one holding the bowl. With shoulders squared, bowlers should align the delivery arm over the aiming line. The picture on the left of the adjacent image shows forward and downward extension of the forearm. To avoid shoulder strain and discomfort, the upper arm should be rather vertical with the elbow near the waist. The centre picture shows this

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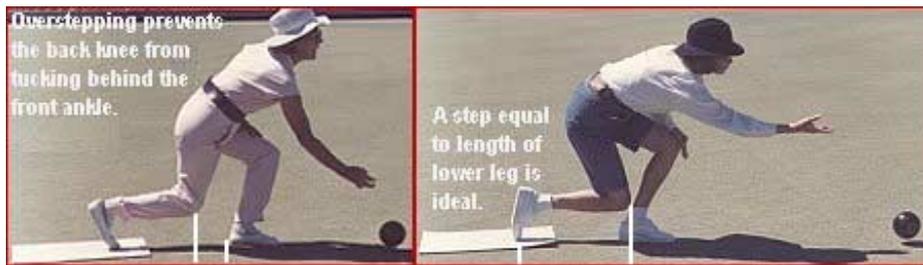
alignment of the upper arm and elbow. Bowlers should avoid angling the delivery arm across the body. The picture on the right shows how unwise use of the non-bowling hand puts the bowl directly in front of the body. Novices could check their delivery arm alignments with one or two trial swings to ensure the arc of movement follows the aiming line. The bowling hand should have enough initial elevation so that an unforced yet unrestrained pendulum back-swing results. Bowlers should direct the focus of attention forward towards their aiming point.

Delivery Movement

Limb & Body Movements

The principal action in any method of delivery is the pendulum-like back swing and forward swing of the bowling arm along the required delivery line. Bowlers should use the same action to deliver jacks and bowls. In the release posture, bowlers should position:

... the knee of the trailing leg near the heel of the leading foot....



... the weight of the body over the sole of the leading foot....



the front knee ahead of the toe....



...and, the chin ahead of the knee. Unless a physical disability necessitates otherwise, bowlers normally advance the foot opposite the delivery arm. The hips and shoulders thereby pivot in similar directions, which minimises twisting of the spine. Further, the outward swing of the hips provides good clearance for the delivery arm.

Rhythm and Timing

The plane of the arm back swing should coincide with the aiming line. The forward step of the leading foot should begin as the arm passes the hip on the back swing. Bowlers should have grounded the heel of the front foot when the bowl reaches its rearmost position.

The opposite arm should move towards a steadying but relaxed position on the thigh of the leading leg. A rigid opposite arm could tilt the shoulder line....



Arm Movement

The plane of the forward or delivery arm swing also should coincide with the aiming line. The bowling arm should accelerate smoothly, so avoiding any need for pushing of the delivery late in the forward swing. It should brush close to the side during its swing. Bowlers should avoid flexing of elbow or wrist so that the radius of the bowling hand's arc stays constant, thereby avoiding an extra movement requiring coordination. They should release the bowl as the arm passes a vertical alignment. The bowl is then at its lowest point and should have attained the required release speed.

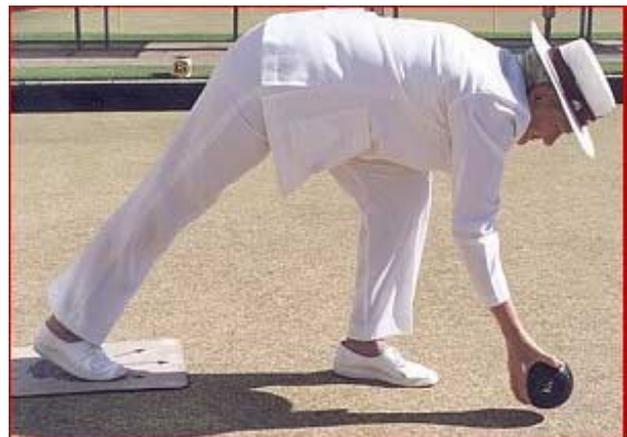
Bowlers using upright stances advance their shoulder line during the delivery movement. This gives them a 'stretched' arc to develop bowl release speed. In turn, this gives them more scope for intuitive changes in delivery hand acceleration before they release their bowls.

Stability

A straight trailing leg tends to prevent lowering of the base of the spine and leaves the body C of G in a high and less-stable position. It also tends to cause overstepping and insufficient forward transfer of body weight. The adjacent image shows this fault.

The shoulder-line should lower towards the level of the body C of G, located near the waistband buckle. A bowler's body mass is thereby in the best position to resist movement caused by the reactive force of the forward swing.

Body movement should be minimal during release, thereby avoiding interference with delivery precision. Movement, caused by instability, head dropping or premature recovery at the instant of release, causes inaccuracy and inconsistency.



Follow-Through

Bowlers should smoothly follow through with the arm extended towards the aiming point. This minimises the likelihood of any hand deceleration before the moment of bowl release. The palm of the delivery hand should be uppermost, avoiding any misdirection of the bowl due to turning of the wrist before release.

In the follow-through posture, bowlers should stay down to confirm that the bowl is following the intended line. They should watch the bowl come to rest to assess any correction required, then recover and take a pace forward with the trailing foot.
