



Bowling

Principles for Improvement!

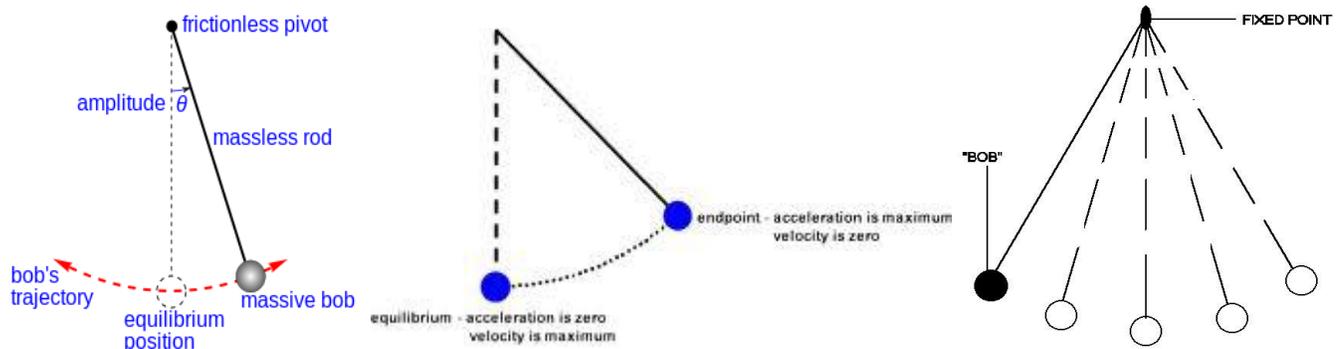
Delivery

A key requirement for high scoring is repeatability of your delivery. In order to increase your repeatability, your delivery should be:

- **Consistent**
- **Well Timed**
- **Natural**

To improve your **consistency** you should have a **FREE ARM SWING**. A free arm swing will help keep the speed and direction of the swing consistent. This principle comes from the free swing of a pendulum.

(See three depictions of pendulums below. The terms and definitions should be discussed with your coach or physics teacher.)



To have the swing in **time** with the steps, the pendulum should begin its downswing when **Step 1** (of a 4 step approach), or **Step 2** (of a 5 step approach) strikes the ground.

(Timing can also be early or late. The effects of this and required attributes in your physical game to be successful with one of these timing preferences should be discussed with your coach. Many bowlers have late timing, especially power players.)

To be **natural**, the set up and approach should be as close to normal body positions and movements as possible.

Playing the Lane

To achieve the optimum angle into the pocket the ball should be in a certain position at approximately 45' based on the amount of oil and amount of hook on the lane. To get your ball to the pocket (17th board) it should begin its break from an optimum board as it exits the oil pattern.

A generic formula to figure this out is:

Break Point Board = Length of oil pattern – 31

For example; the ball should exit the oil pattern on the 10th board for a 41' pattern, on the 8th board for a 39' pattern, on the 6th board or a 37' pattern, etc.

(Below are strategies for playing short, medium, and long patterns as utilized in the Junior Gold tournament and that will be utilized in All Star competition this season.)

Breakpoint Zones



For successful scoring it is important to have a well-defined target line. Define the target line by using two distinct points: one point at the breakpoint and one point located in the heads, usually near the arrows. To play the target line, simply drawing an imaginary line from the breakpoint back through the point you chose in the heads and bowl down that line.

The lane should be divided into three “breakpoint zones”. Zone #1 consists of boards 1-5, Zone #2 consists of boards 6-9 and Zone #3 consists of boards 10-14. The object is to throw the ball into the breakpoint zone that will produce the most strikes.

Here are some basic guidelines on when to use each breakpoint zone. Choosing and using the right breakpoint zone is one of the most important “top techniques”. Many times on flatter oil patterns, you only have two boards at the breakpoint, so if you miss by three or four boards, you don’t strike. Unless a bowler is really paying attention, he or she will never even notice a three board miss. The breakpoint zones as defined below may be four or five boards wide, but that does not always mean you get to use all the boards. As stated above, on some lane conditions there may be only two boards worth of area at the breakpoint and on other conditions you may have seven.

All three breakpoint zones are quite unique in the way your ball reacts to them. Each breakpoint zone has a “sweet” board that you should aim for. In some cases, the “sweet” board will simply produce the most strikes; in other cases the “sweet” board is more for aiming purposes.

Zone #1: Boards 1-5, Oil patterns 38 feet or less

The “sweet” board in zone #1 is the one-board; we don’t usually have to actually hit the one-board, just come close. Aiming at the one-board will make most bowlers more successful at hitting breakpoint zone #1. If bowlers aim more inward than the one-board, they are more likely to miss the target zone to the inside. Zone #1 requires a lot of skill to hit consistently, especially from deep inside, so it must be practiced a lot during each practice session. If you don’t practice hitting zone #1 you will never have the skill to use it.

This zone is very different from the other two zones for three reasons. First, it is right next to the gutter and that makes a lot of people very nervous. If you play breakpoint zone #1, you may throw the ball in the gutter now and then. Just get over it; the rewards you gain by mastering play of zone #1 far outweigh the occasional gutter ball.

Second, you must learn to hit breakpoint zone #1 at different lengths down the lane. This is represented graphically in the photos above; notice how long zone #1 is compared to the other two zones. As a general rule, the shorter the oil pattern, the closer you want to move your breakpoint to the foul line. If the oil pattern is 38 feet, you want the ball to hit the one-board at 39 or 40 feet. If the oil pattern is 35 feet, then you want the ball to hit the one-board around 37 feet down the lane. The reason we pull the breakpoint back toward the foul line as the oil pattern gets shorter is because we need the extra feet of dry backend to use up some of the ball’s energy so it will not over hook.

Third, the first board rarely gets oiled by modern oiling machines, so it can act as a little bumper to keep you from throwing the gutter ball. Don’t be afraid to literally throw the ball “at” the gutter when you see that you have a lot of friction there. It is pretty common to see bowlers throw the ball into breakpoint zone #1, using a target line nearly parallel to the gutter, but many times it would be better to throw the ball “at” the gutter from a slightly deeper target in the heads.

Photo #2 shows how the target line moves in (white lines) as the heads dry, but the breakpoint stays the same. Keep in mind that as the target line moves in, the bowler must be able to produce the rev rate needed to bring the ball back; you must stay within your ability. The same inward movement of the target line holds true for the other two breakpoint zones as well. Unless so much oil is depleted that you are forced to move the breakpoint in, you will keep the same breakpoint and just move your target in the heads.

Zone #2: Boards 6-9, Oil patterns between 38 and 41 feet

Zone #2 is the most used zone of the three; so much so that most bowlers use it without even knowing it. Zone #2 produces the most strikes on a lot of league shots and requires the least amount of skill to hit. Zone #2 is usually used when the oil pattern is between 38 and 41 feet, which covers the vast majority of oil patterns used in every form of competition. The “sweet” board in zone #2 is the

seven-board; it is not only the board we aim at, but the one that seems to produce the most strikes. Unlike zone #1, we don't usually need to worry about how far down the lane we place our breakpoint target. The amount of friction on the lane will determine how far down the ball goes, so just target around 40 feet down the lane.

The biggest mistake bowlers make when playing zone #2 is not watching close enough to notice when the ball slips into zone #3 territory, especially on house shots where there is a lot of oil in the middle of the lane. If boards seven through nine are striking for you and you suddenly hit boards 10 or 11, you will start leaving corner pins.

Zone #3: Boards 10-14

Zone #3 is the least used of the three breakpoint zones, but nonetheless important when the lane condition calls for it. Zone #3 is generally used on longer oil patterns of 42 to 50 feet. Long oil patterns are usually the hardest to play. Zone #3 places the breakpoint closest to the head pin which is the reason it is used on the longer oil patterns. If the oil pattern is about 43 feet long, the ball is not likely to start gripping the lane until at least 45 feet. That only leaves 15 feet for the ball to make its turn over to the pocket. If the ball starts that journey from breakpoint zone #1 or #2, it will either make it to the pocket late, come in behind the head pin, or miss the pocket altogether.

There are a few other times when breakpoint zone #3 should be used even if the oil pattern is not longer than 41 feet:

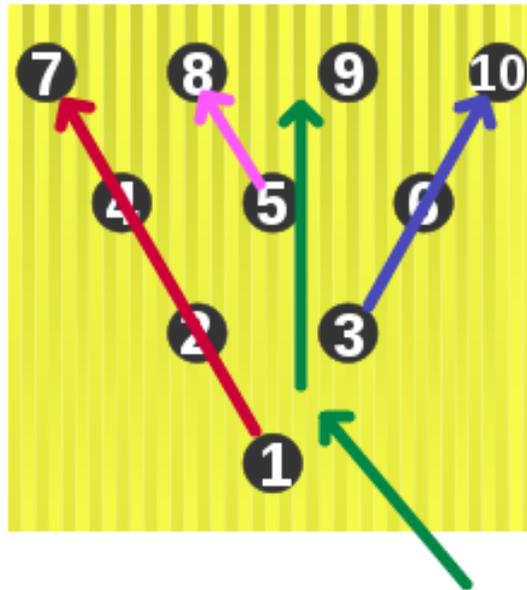
- **Dry outside league shot.** Sometimes by the second game, league shots have so little oil outside of the 10-board that the ball begins to read the lane long before it can make it to the seven-board in zone #2. This is one of the few times you actually want to change breakpoint zones. You will need to move to breakpoint zone #3 and move your target in the heads accordingly.
- **Reverse block.** True reverse blocks, where there is less oil in the middle of the lane than there is from the ten-board to the gutter, are fortunately very rare. If the outside is flooded, then you will be forced inside at the breakpoint to zone #3. A ball that journeys into zone #2 in this case will just skid away.
- **Flat oil like the US Open.** If the lanes are oiled dead flat from gutter to gutter, every tiny mistake you make will show up. To bowl well on flat oil, you have to be very accurate. Since zone #3 is the closest to the head pin, the ball travels less distance from the breakpoint to the pocket, giving the ball less time to go off-course once it starts hooking. Nothing is more predictable than dead straight.

Zone #3 has a less defined "sweet" board than the other two breakpoint zones. Sometimes the "sweet" board is number 12, but many times board 10 works best.

(Keep in mind that this game plan is just a guideline to get you started. There is an exception to every rule and there are several variables to consider. Discuss strategies with your coach.)

Reading Ball Reaction

There are three key pins you must observe to properly read your ball reaction; the 4, 5, & 6 pins.



Proper pin deflection on a strike hit.

If the 4 hits the 7 on the Left, the ball was light.

If the 6 hits the 10 on the Right, the ball was light.

If the 5 hits the 8 on the Left, the ball was light.

If you leave the 5, 7, 8, or 10, the ball was light.

If the 4 hits the 7 on the Right, the ball was high.

If the 6 hits the 10 on the Left, the ball was high.

If the 5 hits the 8 on the Right, the ball was high.

If you leave the 4 or 9, the ball was high.

Adjustments

In general; if standing at the back of the approach and targeting at the arrows, moving your feet 2 boards left or right, while keeping your target consistent, will result in a 3 board move of your ball in the opposite direction at the pins.

For example:

If you throw a good shot and hit your target but the ball goes high and leaves the “big 4” 4-6-7-10 split (hit board 20), if you move your **feet 2 boards left** and keep your target the same, the **ball** should end up **3 boards right** and hit the strike pocket (hit board 17).

Or, if you throw a good shot and hit your target but the ball hits light and leaves the “bucket” 2-4-5 (hit board 14), if you move your **feet 2 boards right** and keep your target the same, the **ball** should end up **3 boards left** and hit the strike pocket (hit board 17).

(This is a general rule for angle adjustments that provides a basic starting point for all bowlers to develop their adjustment process. Bowlers should discuss with their coach parallel adjustments, and other advanced adjustment techniques.)

Some bowlers like to move forward or back on the approach. This can be a difficult adjustment to make successfully because it can have a negative effect on the three critical factors to a good delivery (**Consistent, Well Timed, & Natural**) due to a needed adjustment to a bowlers natural stride length and timing.

Moving forward 3' on approach = Moving 1 board left.

Moving back 3' on the approach = Moving 1 board right.

(It is much easier to move 1 board left or right successfully)

In order to be able to make adjustments, you need to know where your ball has hit the pins relative to the strike pocket (approximately board 17). This chart can be used as a guideline.

	<u>What you left</u>	<u>Where you hit</u>
High	Crossover X	23
	3-6-10	22
	3-10	21
	4-6-7-10	20
	6-10	19
	4	18
	STRIKE	17
	10	16
	7	15
	2-4-5	14
	2-8-10	13
	1-2-4-7	12
Light	1-2	11