

Understanding the Bowling Environment

by Scott Berk

Bowling. When the pros do it, they make it look easy. But no one will say you're telling lies if you contend that getting the ball to hit the pins correctly is actually quite difficult. Now granted, not many people stay awake at nights trying to figure out the complex physics involved with a good hook shot. In fact, most people wouldn't even give it a second thought. In this age of fast paced media, not many people could sit through two frames of bowling on ESPN. They would rather flip through half a dozen cable channels, getting thirty seconds of the new Madonna video, 1 minute 20 seconds of the HBO movie of the month, and 15 seconds of color radar. Indeed, the grace and precision of bowling eludes most people these days simply because there isn't a Nintendo joystick hooked up to it! But I digress...

As it turns out, there is a lot more to bowling than simply throwing a ball down a stretch of wood to knock over some pins. Bowling is a precision sport, and to fully appreciate it, one must fully understand the bowling environment. As staff chemist, I am trained to observe my environment, draw conclusions, and report back to you, the uneducated reader. With this in mind, I will describe two very important aspects of bowling that many people overlook. The hardness and composition of the bowling ball, and the oiling of the lanes.

All bowling balls are NOT created equal. Aside from the obvious weight differences, each ball must be custom fitted to your hand in order to provide maximum control and comfort. In addition, the finish of the ball is very important. A very hard ball will not grip the lane as well as a soft ball. This is very important in controlling how much one's ball curves as it makes its way toward the pins. Finally, the core of the bowling ball is not necessarily uniform. Some balls are heavier on one side, further promoting spin and curve. Good bowlers recognize how to use the properties of their balls to develop their particular throw. If you rely on a sharp curve to swipe the pins from the side and increase "pin action", a softer ball is for you. The ball grips the lane, and, if thrown with a spin, will curve much more easily than a hard lustre ball. If a straight throw down the middle is more your style, a hard ball is more in order. It allows for less finesse, but more power.

Of course, what really determines the type of ball to use is the condition of the particular lane which one uses. Lanes are oiled about two-thirds of the way down. This means that the path of the ball is relatively unaffected by its spin until it reaches the lesser waxed third of the lane. Then, depending on it's hardness, the spin of the ball imparts a curve upon it. This is why some bowlers throw the ball far from the center, and then it suddenly appears to veer into the pocket, as if by magic. The degree of oiling varies from lane to lane, so many professional bowlers have two or more balls of varying hardness.

If a lane is heavily oiled, a softer ball must be used in order for that all-important curve to take effect. If the lane is lightly oiled, a harder ball must be used to prevent the ball from over-curving. So as you can see, the simple looking sport of bowling requires a bit more thought than you may have realized. To bowl well requires practice, ambition, and discipline. Most significantly, however, it requires a knowledge of the playing conditions, a familiarity with ball-lane interactions, and, above all, a healthy respect for, if not complete understanding of, SCIENCE!