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BOWLING

DIGEST

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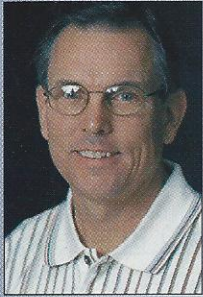
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Plan Your Ball Path

■ *I have noticed many pros using various drilling positions on their balls, and Marshall Holman also makes reference to the pin placement on the ball. I have three questions: (1) What is the pin on the ball? (2) How do the pros go about selecting the preferred drilling position? And (3) how do they get the balls drilled on tour?*



Bowling Clinic

By BILL SPIGNER

The pin is a colored dot on the ball that signifies the position of the top of the core in the ball. With today's high-tech bowling balls, the ball driller must know where the core is in the ball.

When a ball is built, the core—anchored by a small rod—is suspended in a mold, and the cover stock is poured into the mold. When the cover material hardens and the ball is removed from the mold, the rod that was holding the core of the ball in the mold is removed. Now there is a hole in the ball that has to be filled, and it is filled with plug material, which on the surface on the ball looks like a dot.

All the way up to the early '90s, Columbia was the only company that colored those plugs. Using dots to refer to the makeup of the ball started with Columbia's Yellow Dot in the mid-'70s. Columbia was making a hard plastic ball with a white dot in the middle of the label. After making the Yellow Dot, everyone started to refer to Columbia's balls by the color of the dot.

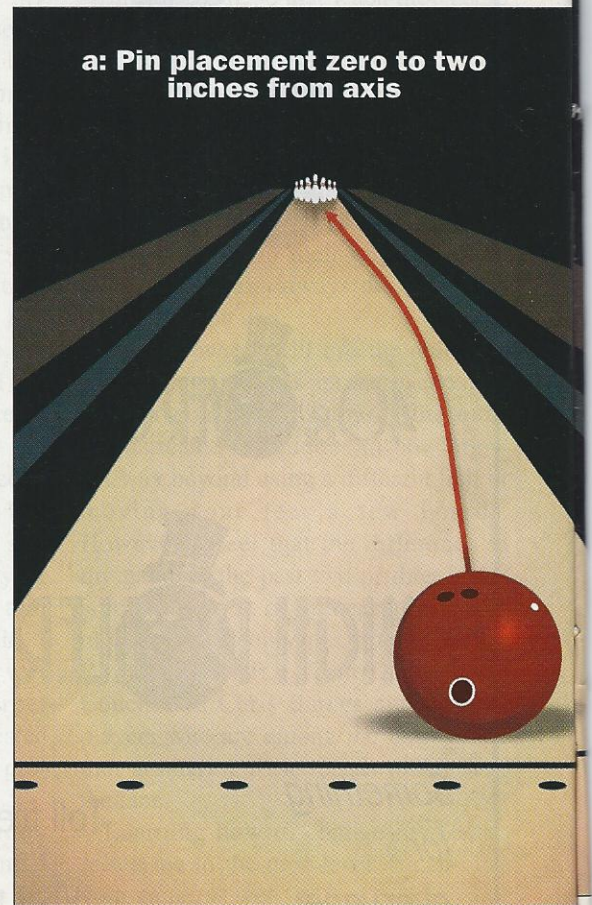
As the cores of the modern-day resin urethane balls became so strong, and as our understanding of the core's influence on the motion of the ball advanced, it became important for the ball manufacturers to color the plug so we could see what we were dealing with. Today there is no high-performance ball that doesn't identify where the core is and how far it is from the center of gravity, or "cg." The cg is marked by a small punch mark on the surface of the ball. The position of the cg relative to the pin determines how we drill the ball for the reaction we're trying to get.

You may have noticed that very few high-per-

formance ball labels are located near the pin and the cg. They're all away from the drilling area, so the ball driller can clearly see the cg and the pin. Only the plastic balls and the lower-priced resin and urethanes still put the label over the cg—these are the plastic and urethane balls with a pancake-style weight block. As a matter of fact, Columbia is the only company that has the pin and cg in the same spot on their plastic balls. Most of the companies build their cheap balls with no regard to where the pin is, and they color-coordinate the plug to the ball. But they still mark where the cg is by putting the label above it.

The pros pick out their preferred drillings based on what they feel will work for them. It takes knowledge of bowling ball construction—core, cover stock, and how they influence each other—and axis coordinates to help decide the drillings.

a: Pin placement zero to two inches from axis



Need some help with your game? Bill Spigner welcomes questions from readers. Mail them to: Bowling Clinic, Bowling Digest, 990 Grove Street, Evanston, IL 60201.

With Pin Placement

If two bowlers with equal talent are bowling equally well, the player with the better ball reaction will always win. The pros look at the lane condition and the ball reaction they're getting, and if they're not getting a good reaction they start thinking about what piece of equipment and drilling configuration will help them get the reaction they need to help maximize their performance.

Getting the right ball reaction through the use of equipment is part of the game today. It's critical to understand ball reaction to help you play well, but you have to be honest with yourself and not blame bad bowling for a problem caused by using

the wrong ball. The best can survive without the best piece of equipment in their hands because they know enough to adjust their game to stay in the hunt until they can "match up." Matching up is having the right ball, the right speed and rotation on the ball, and playing the right area on the lane. And staying matched up requires making the right adjustments as the lanes change.

What the pros look for is the right type of ball movement for the condition they're playing on. For example, if you're bowling right after the lanes are stripped and oiled, you'll have a lot of front-end skid and strong back ends—the

ball will automatically slide down the lane and finish hard without a lot of effort from the ball or the bowler. On this condition, you need to have the ball set up to have a controlled movement. You don't need a "skid long, flip hard" type of drilling and surface.

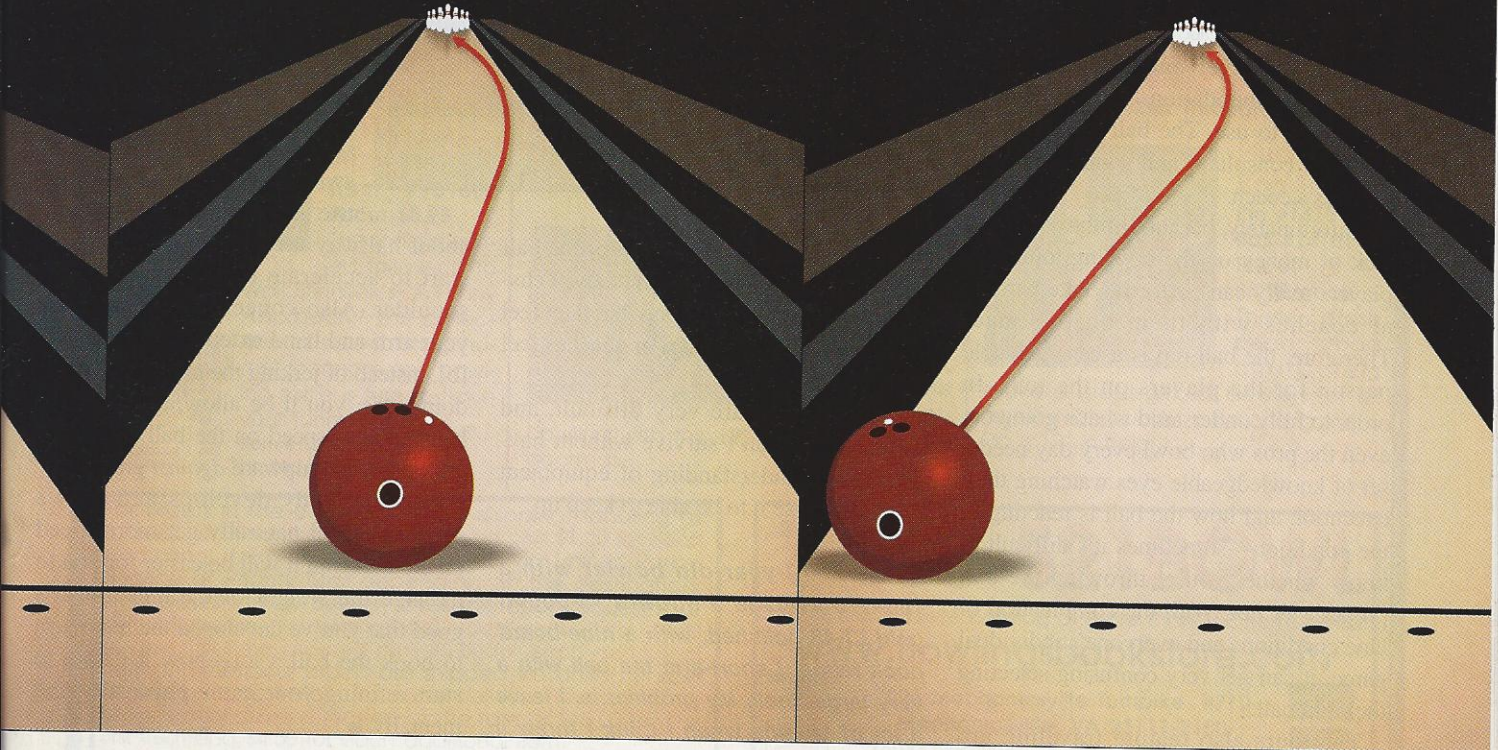
On the other side of the coin, late in the day after a lot of bowling, the heads will be hooking early and the back ends will be tight because of carrydown. The shot will have moved deep, so you'll need a ball that goes long and finishes hard. And during the day you could encounter many different ball reactions between those two extremes.

When the pin is close to the axis of rotation, you can expect a early, even arc [a].
When the pin is far away, you'll get a pronounced hook at the end of your ball path [c].

The ball companies maintain staffs of players on both pro tours, and they also have ball reps

b: Pin placement three to four inches from axis

c: Pin placement five to six inches from axis



out on the tour with the players. The ball rep's job is to watch the ball reaction as the players use his company's balls; if a player requests assistance from the ball rep, he'll

shops that drill balls for the players while they're on the road. These pro shops, which fill the back end of a semi-truck, stock a wide variety of every company's equipment. The players will often drill out new equipment between rounds if they feel they don't have something in their arsenal that will work on a given

ball right in the pocket. What may be causing this problem, and how I could solve it? My line is standing on the last dot with my left foot and aiming for the second or third arrow. I take a six-step approach with medium ball speed.

The biggest problem you have is speed and the number of boards you're covering. With a medium speed and a large hook, the ball is using up a lot of energy getting up to the pocket. By the time it reaches the pins, it's traveling too slowly and the angle is too wide to get the 6-pin to kick out of the gutter to hit the 10-pin. We call this "leaving a weak 10."

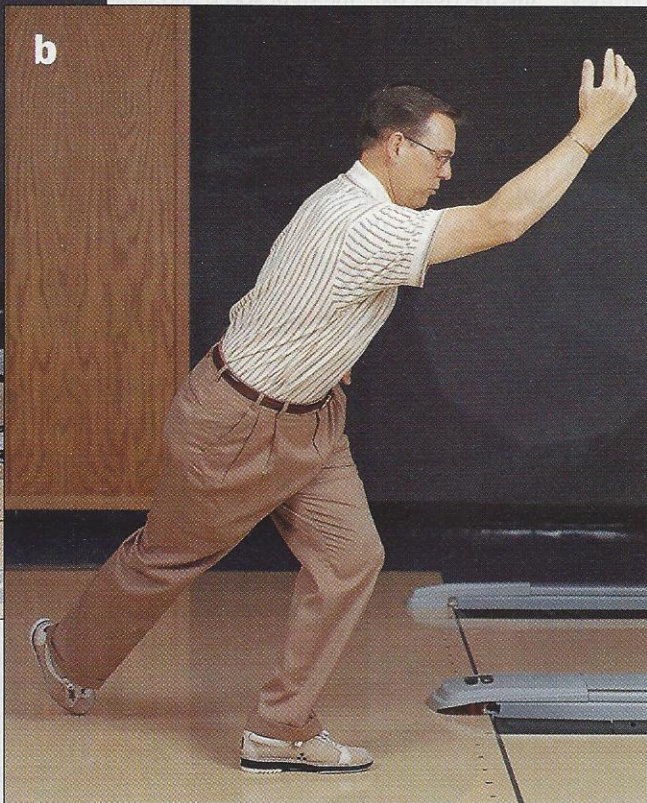
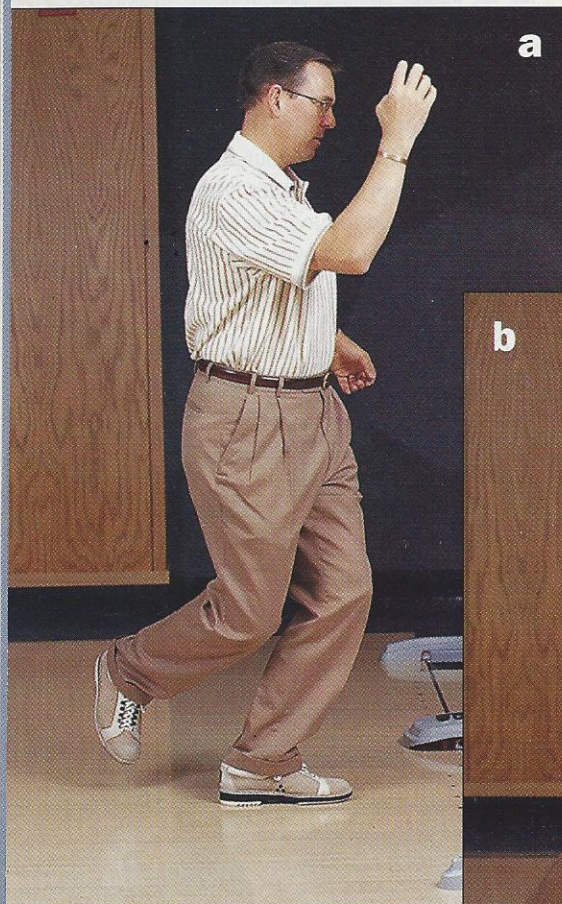
Your solution will be to tighten up your line and pick up your speed. The problem you may have doing this is your size. Currently you're "short-arming" the ball—lifting with the biceps and forearm, rather than extending through the swing from the shoulder—to get speed and hook out of the ball; this isn't unusual to do when you're trying to learn how to hook the ball. However, you're using a lot of muscle in your swing and upper body to hook the ball.

To generate more speed with a more direct line down the lane, loosen up your swing. You want the ball to swing freely, backward and on the forward swing. Then,

about halfway through the downswing, start to accelerate the swing from the shoulder. Also concentrate on making your arm and hand extend down the lane [b], instead of jerking the arm upward. By doing this, you'll be allowing gravity to help you put speed on the ball instead of pulling the ball upward *against* gravity.

As your body develops and grows stronger you'll naturally get more speed on the ball, and it will be easier for you to manage the weight of the ball too. It's good that you've developed the hand turn to hook the ball a lot—now it's time to start refining your game physically and mentally. ●

Don't "short-arm" your swing—lifting with the forearm and biceps to generate speed [a]. Instead, loosen up your swing by extending through the shoulder [b].



KATHLEEN ECONOMOU (2)

watch the player and make some recommendations about equipment to use. The ball rep acts as a consultant and sometimes as a coach.

Unfortunately, because of the lack of money on the bowling tours, the players really can't afford to take personal coaches with them on the road. Therefore, the ball rep is a very valuable person for the players on the tour. In order to fully understand what's going on, even the pros who bowl every day need a set of knowledgeable eyes watching their execution and how the ball is reacting to the condition—sometimes it's difficult to know whether you're throwing the ball properly or not. With the combination of lane conditions and everyone's individual game, it can get very confusing selecting the right ball.

The tours also feature traveling pro

day's condition. With the help of the ball reps and the tour ball drillers, they'll custom-design a ball based on what they feel they need or what the reps or coaches feel they need.

The pro tours are very difficult, and players today can't survive without having a good understanding of equipment and how to use it to be able to keep up.

■ **I am a 12-year-old bowler with a 160-170 average. I throw a 15-pound gold LT-48 polished, with a nine-board hook rating. I short-arm the ball with a very large hook. My problem is, I leave a lot of 10-pins when I think I threw a**