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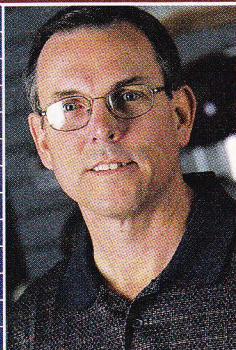
Bill Spigner's
ball-speed primer

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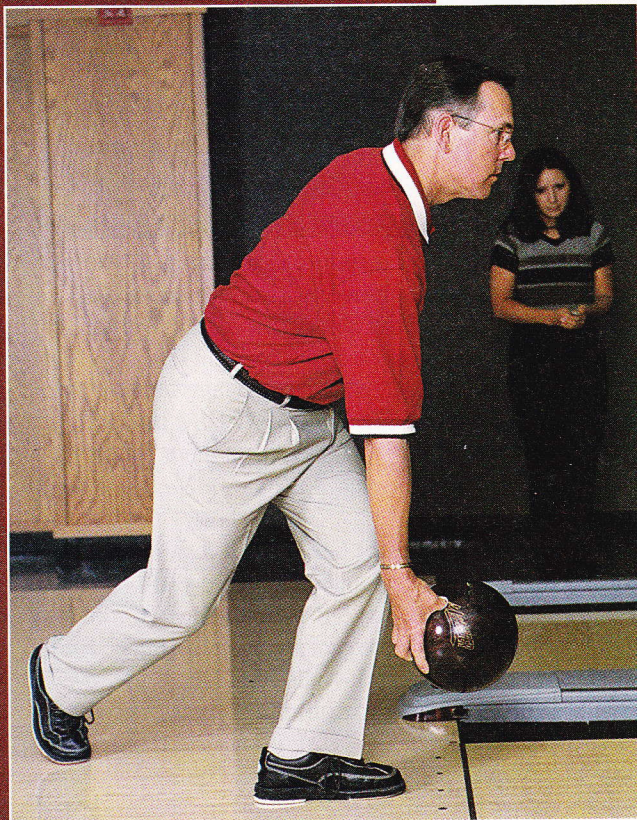


Stop, Watch Speed to Score Bigger

By **BILL SPIGNER**

Need some help with your game? Bill Spigner welcomes questions from readers. Send a letter to Bowling Clinic, Bowling Digest, 990 Grove Street, Evanston, IL 60201, or e-mail bowl@centurysports.net.

A partner [background, right] running the stopwatch from foul line to head pin will help you determine your average ball speed.



■ *It's been a few years, but I remember you writing an article about ball speed. Can you revisit ball speed and how to incorporate a stopwatch? I am almost 80 and still average 175, but I'm slowing down. This information will bring me back to the 190s again.*

Using a stopwatch to judge your speed is a good way to get an idea how fast your ball is traveling. To do this, you need a partner to run the stopwatch. Have this person stand at the foul line about two lanes away. Start the stopwatch as soon as the ball crosses the foul line and stop it when the ball contacts the head pin. Do this four or five times, writing down the result each time. If the numbers are consistent, average them all out. If the numbers vary a lot, take the test over or eliminate the lowest and highest numbers before averaging.

If the ball takes 2.4 seconds to reach the head pin, the ball is traveling an average of 17 miles per hour from your hand to the head pin. Why is it an average? It's because "off the hand" the ball is traveling fastest. The ball slows down by the time it reaches the head pin, losing 20% to 25% of its speed from the foul line to the head pin. This speed is also based on the ball trav-

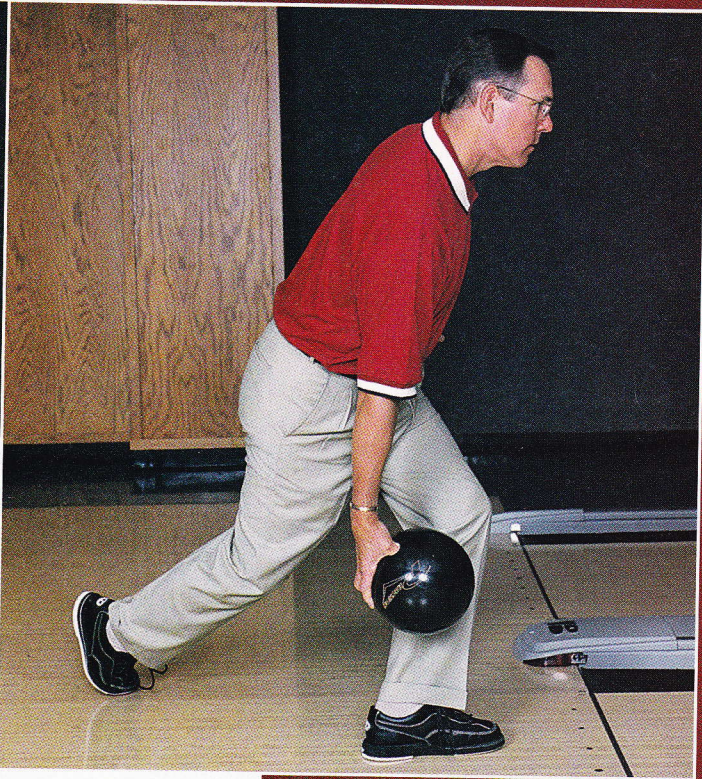
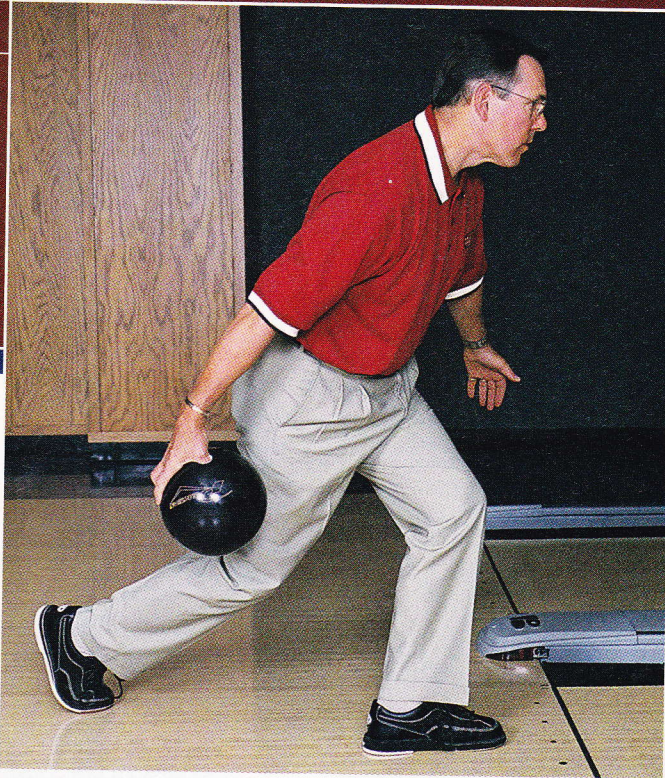
eling a straight line from the foul line to the head pin. No competitive bowler throws a perfectly straight ball. So a ball that takes 2.4 seconds to reach the head pin with a curve is actually traveling faster than an average of 17 mph down the lane. When using a stopwatch to judge your speed, anything from 16 mph to 17.5 mph is a good speed. Higher-average bowlers generally have faster ball speeds than lower-average bowlers.

The right ball speed is very important. Without the right speed, the ball can't carry the corner pins well. If the ball speed is too slow, it loses energy and doesn't have the power to dig out the 10-pins and carry the 7s. If the speed is too fast, the ball will still be sliding at impact and will also have difficulty knocking out the corner pins.

The big question is, how do we know if our ball speed is right when we are in competition and don't have the use of a stopwatch or a coach? It's actually very simple: The pins will tell us. When you're bowling well, your carry is at its best. For righties, on light hits the 7-pins go, on half-pocket hits the 6-pin will gently take out the 10, and on high hits the 4-pin gets tripped. Also, when you're bowling well, the miss-hits don't leave you with big splits and tough spares.

When carry is good, it's not luck that knocks the pins down—it's being matched up right on the lanes with the right ball, line, and speed. On the other hand, if nothing is falling, you need to look closely at what the pins are doing and make a decision on how you need to change. If the pins are falling lazily, your speed is a little slow. If the pins are flying up off the pin deck, over and around the other pins at a fast pace, your speed is too fast.

There are two ways to change your



speed without changing your delivery. First, if the ball is traveling too fast, you can go to a ball that will roll earlier, which will help the ball slow down. If your ball is too slow, you can go to a ball that slides farther down the lane, which will help the ball retain its speed longer.

Another thing you can do if the ball is moving too fast is to move more into the drier part of the lane, where the added friction will slow your ball down. Do the opposite if the ball is too slow; try to find more oil to help the ball retain its speed.

To increase your speed, you need to get your body moving a little faster so your swing is a little late. With your swing a

little later, your sliding foot should be stopped, and you can accelerate your hand and swing. To slow the ball down, you need to slow down your tempo. Let the arm swing through without trying to accelerate it as much.

Still another way to change speeds is to hold the ball higher for more swing length (for faster speeds) and lower for less swing and a slower speed.

Another physical adjustment to get the ball to hit right if you have difficulty changing speeds is to change the spin on the ball. If your ball is reacting too early, you can spin the ball more, increasing the axis tilt and rotation. This will help the ball slide longer and retain its energy to get the ball to hit. On the other hand, if the ball is sliding too far, you can try to get less spin and an earlier roll. Looking closer up the lane can help the ball roll earlier by getting the ball down on the lane sooner. Looking further down the lane can help delay the hook by lofting the ball out on the lane more.

Today, speed control is difficult because of the great variety of oiling patterns, types of oils, lane surfaces, and bowling balls. Today's bowling balls make the lane conditions change faster

Starting your swing later [left] accelerates your hand and swing, speeding the ball down the lane. An earlier swing [right] is accomplished by slowing down your motion, and gives you a slower roll to the pins.

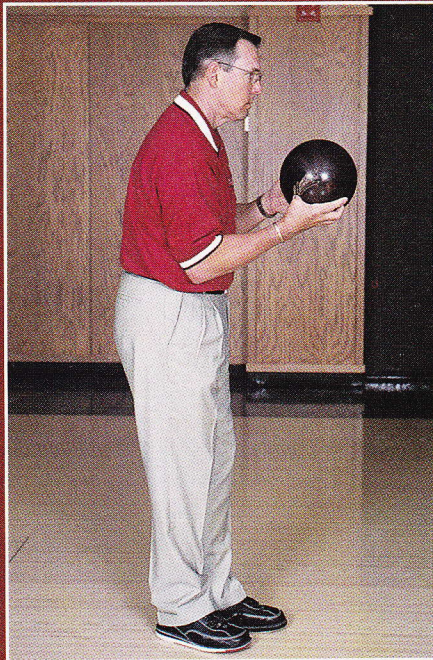
Ball Speed Calculations

Time (seconds)	Ball Speed
3.41	12 mph
3.15	13 mph
2.92	14 mph
2.73	15 mph
2.56	16 mph
2.41	17 mph
2.27	18 mph
2.15	19 mph
2.05	20 mph
1.95	21 mph
1.86	22 mph

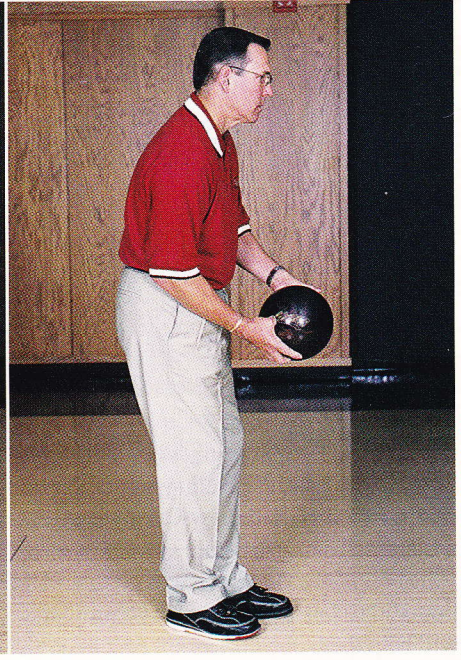
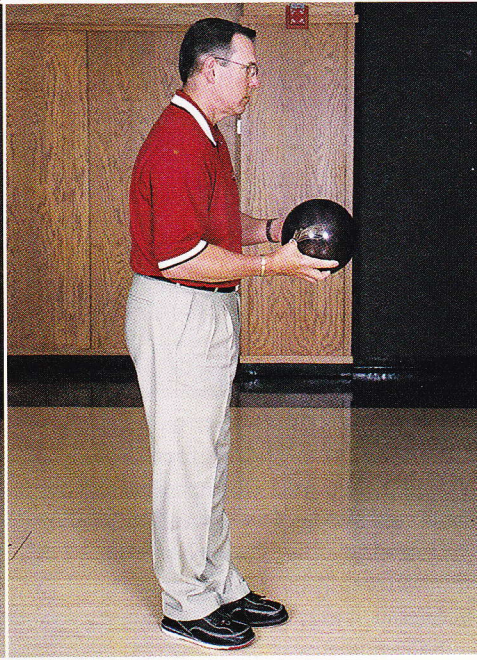
than ever before, so you really have to stay in touch with what's going on with your ball reaction on the lanes and through the pins. It's difficult to know how to best adjust on every roll. Experiment with different methods to get the ball to have the

also call Kegel at (863) 382-6588. CATS is also available in Reno, at the National Bowling Stadium.

The best bowlers all have great speed control. They have the ability to adjust the speed to get the ball to hit right. The



One easy way to adjust ball speed is how you hold your ball. Holding the ball higher lengthens your arm-swing and speeds your ball down the lane.



speed you need to impact the pins with force. Only a few of the top pros have all the shots in their bag and can use them when needed to get the desired ball reaction. Experiment with the examples I've outlined to maintain your ball speed. Pick out the ones that are comfortable for you to use and make them part of your game plan.

Besides using a stopwatch, there is a great program available in bowling, the Computer Aided Tracking System (CATS). The Equipment Specifications Department of the ABC/WIBC developed CATS, which measures all the vital information involved in a bowling shot: accuracy, speed, ball rotation, ball path, and the degree of consistency with which they are achieved. There are a couple of places that I know of that has this program available, and one is the Kegel Training Center in Sebring, Fla. For information about CATS, log on to www.KegelTrainingCenter.com. You can

best ever at speed control was the late, all-time great Earl Anthony. I had the pleasure of competing against and watching Earl. He had the uncanny ability to change speeds and spins at the drop of a hat. His overall motion looked the same, but he was able to speed up or slow down that motion and control it shot after shot for long periods of time. Many times he'd be the only lefthander in the finals because he could sense what he needed to do on the lanes and go out there and do it. He could still have been a big winner on the senior tour this past year had he participated.

Anthony's ability to repeat the types of shots that were needed to score gave him the nickname "The Doomsday Stroking Machine." He set standards that all great bowlers are measured against. Whenever players from my era talk about precision, Anthony is the model. We will all miss you greatly, Earl. ●