Making Long Putts versus Avoiding Three-putts -- Don't Confuse Apples and Oranges

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ZipTip: DISTANCE CONTROL / TOUCH: Making Long Putts versus Avoiding Three-putts -- Don't Confuse Apples and Oranges

Substituting a big, fat target as a way to avoid three-jacking is not a good way to get better distance control, which is the real problem, but there is a way to avoid long comebacks while trying to sink monsters by keeping sharp targets for top distance control and supplementing this with some reasonable boundaries.

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A very common piece of conventional wisdom is that you are unlikely to sink a putt much over 20 feet, and therefore you should concentrate on avoiding three-putting by lagging the ball to within a "target" circle about six-feet in diameter around the hole. No, my friend..... Three-putting comes from poor distance control, and a fatter "target" doesn't help much at all. In fact, I believe that on balance it hurts distance control, and it definitely hurts your chances of sinking the putt.

The Debate.

Quite a few pros and golf instructors have recommended this "six-foot circle" tip for lagging long putts, notably Jack Nicklaus, David Leadbetter, and Dave Pelz. On the other hand, such notable putters as Loren Roberts, Arnold Palmer, Dave Stockton, and Raymond Floyd advise trying to make the long putts, not lag them close. There's some confusion in this area of putting lore that needs sorting out.

The lag-advocates generally believe the chances of making a 30-foot putt are so slim, that on balance one is better served focusing on making sure to avoid three-putting. It's true pros on average don't sink but about one in seven 20 footers and one in ten 30 footers. On the other hand, those who advise aiming for the hole believe there's no point in reducing your chances of making a long putt by giving up before making the stroke, and also believe that tight focusing on the hole is just as likely to avoid three-putts as lagging.

Making Long Putts versus Avoiding Three-putts.

The confusion lies in failing to separate the debate into a) making long putts, and b) avoiding three-putts. These problems are, and should be, treated like apples and oranges.

Making Long Putts. For the purpose of making a long putt, the terms "lag" and "aggressive" putts don't have the same meaning as they do in the context of avoiding three-putting. Here, a lag putter is one who tries to "die the ball into the hole," regardless of length, whereas an aggressive putter is one constantly mindful of the mantra "never up, never in," and always wants his ball to stop beyond the hole if it misses. The rationale of the lag putter, including Bobby Jones, Bobby Locke, Roberts, Stockton, and others, is to make more of the hole available.

The faster the ball rolls as it crosses the lip, the less time it has to drop into the cup before it reaches the back wall. The fastest putt must cross the widest part of the 4.25-inch diameter cup (a centercut putt) in order to have sufficient time to drop enough. The "effective hole" for putts in the range of 8 to 9 revolutions per second at the lip is a path across the center no wider than a quarter of an inch. Putts slower than this can cross the cup either side off the center line on a much broader path and still have sufficient time to drop.

The fastest possible ball speed for any cup is about 51 inches per second at the lip (about 9 revolutions per second) -- a speed that usually carries the ball about four feet or more past the cup if it misses. Such a putt has only one line across the cup that is wide enough -- the center line. In effect, this cup is as wide as the bottom dimple on the ball. A ball that is 40% slower, about 30 inches per second at the lip (6 revolutions per second), has about the central one-third of the cup available (1.5-inch wide path). A ball that reaches the hole going 2 revolutions per second (about 10 inches per second) has over two-thirds of the hole available, and such an "effective hole" has a crossing path nearly 3 inches wide, twice the size of the cup for a ball at 30 inches per second.

The aggressive putters make the point that if the putt is short, it has no chance of going in ("never up, never in"). The problem with this logic is that no golfer ever tries to "lag" short while also trying to make the putt. And an aggressive putt that is too fast to drop also has "no chance" of going in. And a lag putt that does reach the hole has somewhere between 100% and 60% of the hole available for capturing the ball, while an aggressive putt usually doesn't have more than about 40% to 60% of the hole available. Obviously, this line of thinking doesn't come to grips with the problem of what is the best way to manage speed and distance to make a long putt.

Dave Pelz argues that aggressive putts are better because an aggressive putt "holds the line" better, apparently meaning that a faster putt is less susceptible than a slower putt from being knocked off line by defects in the putting surface. A problem with this, however, is that a fast putt and a slow putt have speeds that cover the same range except for right near the hole. The real issue is whether the lag speed near the hole is sufficient to overcome defects and hold the line or whether aggressive putting that narrows the "effective hole" is necessary. It's a trade-off between having a "wider hole" and taking care of surface defects.

Many pros in the "aggressive" camp have long recommended a speed for the ball at the hole that, if the ball misses, would carry the ball about one foot past the hole. Pelz advises 17 inches. Cary Middlecoff says one foot. Some say 8 inches; some others say 24 inches. Research shows pretty convincingly that there is not a single number for an optimal go-by distance, and instead the optimal number ranges from a low of 5 inches past on Bent greens to a high of 40 inches past on Bermuda greens, with Bent greens falling in the range 5 to 25 inches, and Bermuda greens falling in the range 20 to 40 inches. It seems that in reality the lag putters simple prefer the slower end of the range and aggressive putters like the faster end.

In the trade-off, however, there is one certainty and one questionable problem. The fact that a slower putt makes a wider "effective hole" is not seriously subject to debate, since it follows strictly from the laws of gravity and motion in physics. On the other hand, it is quite a dubious proposition that every green has the same sort of defects, and these defects are always best overcome by a set, aggressive go-by speed. This is even more the case since most pros advocating aggressive putting as best for making long putts are pros who putted on the greens of the 1950s and 1960s, before the triplex mower and great

advances in greenskeeping and agronomy made the surface conform more closely to an ideal. Pelz's research dates from 1976, almost a quarter-century ago. In picking between the two, I would say always go with the certainty of the wider hole, unless your personal inspection of the actual putting surface shows you real problems. So, the putt that is closer to the slow end seems preferable.

The Decay Phase. But there is another circumstance to take into account. In 1968 Cochran and Stobbs in their book The Search for the Perfect Swing investigated putts and found they occur in three phases: skid, roll, and decay. In the skid phase, the ball is moving laterally faster than it is rolling, so it skids until the skid friction makes the rolling speed up to the lateral motion, at which point the skid ceases and the rolling matches the lateral speed. This usually lasts about 15% of the total length of a putt. In the roll phase, the ball rises up onto the top of the grass out of the nap and experiences little frictional drag from the grass. Eventually, however, the ball loses too much speed and it drops back in the nap; more of the ball is faced with drag and it dramatically slows to a stop.

During this phase, the ball is more susceptible than in other phases to surface defects, foot prints, or any troughs or hillocks at the hole (if any there be), as well as to the influence of gravity, breaking sharply. So it is generally a good idea to get the ball to the hole before the decay phase sets in.

On any given green, this decay phase will almost always have about the same length, because it always starts whenever the ball slows to the critical speed and the grass has the same drag on every putt. A typical decay phase lasts about one foot on most greens. But a tighter green with little difference in friction between the tops of the grass and the nap has a longer, less pronounced decay phase.

I would recommend getting the ball to the front lip before this decay phase sets in, and that means roughly a speed that will carry the ball about one foot past the hole if it misses. On the other hand, on truly fine putting surfaces, the decay phase is not that much of an issue. Here the issue is more of the final breaking of the putt as it slows, rather than the fear of bumping something down in the nap. You have to take a look at the surface you face.

In conclusion, the best speed to make a long putt is one a) that gets the ball to the hole, b) that is slow enough to widen the hole in a reasonable trade-off with overcoming surface defects and the decay phase, if necessary, and c) that does not arrive with too much speed to drop. For my money, the lag putters on the fine green surfaces of today have the best of the argument.

Avoiding Three-Putting. In this context, "lag" putting means stroking the ball with the intention of having it stop short of the hole and "aggressive" putters are ones who believe an occasional three-putt is counterbalanced by the number of first putts made. As you can readily see, based on the above, I disagree with this approach because I believe "lag" putters make more first putts and I disagree with stroking any putt without the intention of sinking it.

The real problem here is understanding what causes three-putting and what trade-offs are involved. Three-putting rarely occurs with leaves under three feet (hence the six-foot diameter target circle). That's because almost anyone is about 90% or better from inside three feet. But fundamentally, three-putting is caused by a leave that is outside your personal sure-thing range. Four footers is where the problem starts for most people, so three-putting comes from leaves of about four feet or more.

Three-putting is usually a matter of putts of 20 feet or more. If you leave a 12-foot putt 4 feet short, you have more serious problems than three-putting to attend to. Studies show that pros don't usually three-putt more than once or twice in a tournament, on average. A three-putt for a pro is very hard to accept. The explanation is because pros very seldom miss first putts by more than about a foot or two, well within their comfort range. On long putts, 30 to 40 feet, most pros are sufficiently accurate with distance control that the ball will stop in the comfort zone almost everytime unless the golfer makes a mental mistake or comes out of focus.

Pros who tell themselves that aggressive putting results in more first-putt sinks have a belief that focusing on the sink, to the exclusion of worrying about any miss, is more effective, as is the faster ball speed at the hole. Phil Mickelson and Tiger Woods have shown this approach. The usual result is more leaves that are outside 4 feet coming back, with predictable results. A pro who tempers the belief in focusing on the sink to the exclusion of concern about the miss with a more reasonable speed for the ball at the hole gets the best of both worlds. Loren Roberts, Dave Stockton, Raymond Floyd, and Bobby Locke all fall in this camp.

Most pros say three-putts are more often the result of leaves too short of the hole, while a few say long comebacks are the problem. Hardly anyone says three-putts are frequently caused by seriously missing the line of a long putt. Nicklaus seems to believe the benefit of the six-foot circle target is that it makes it less likely the ball will fail to get to the hole, but he recommends aiming to stop the ball on long putts three feet short, hoping mainly the ball will not end up more than three feet away from the cup, either short or long. Well, that's not a circle; it's an aim spot. And whatever happened to "never up, never in"?

The broader circle image confuses a distance aim spot with a fatter target. Give Nicklaus credit for sensing the difference: he doesn't try to calibrate distance based on the fatter target; on long putts he aims to send his ball on the sink line to a spot three feet short. The idea that you "need" a broader, fatter target visually or otherwise to avoid three-putting long putts is bogus. Visually, the image of the complete hole itself does not approach the limit of targeting focus and accuity until the length of putts reach about 100 feet, which is pretty rare indeed. Allowing your startline to be aimed left or right of the hole to the edges of such a circle makes little sense as a preventative against three-putts.

In general, both the line and the distance are best served by a tight focus on the actual visual target you intend to roll the ball to, even more so on long putts where start line errors get magnified by length and where distance assessment requires a more finely tuned attention and focus.

The Cliff of Certain Death. An interesting mental tactic from Jim McLean and Fran Pirozzolo is to imagine a cliff two feet behind the hole, to avoid going too far past without leaving the long putt short. This sort of image is especially useful on slick downhill putts or on putts with an increase in downward slope just near and beyond the hole. (USGA pin placement guidelines suggest it is unfair to locate the pin without allowing any putt to that location to be stopped within two feet of the hole and to have fairly uniform slope for about three feet around the hole.) This actually enhances distance targeting in a curious way. The more emotionally "crucial" a situation, like hearing a snake in tall grass just beside the footpath, the sharper your sense of spatial relations. Pehaps a better image would be to imagine a sharp downhill slope starting two feet past the hole, and if the ball reaches here even at trickle speed, it will continue off the green. This image supplements rather than supplants tight targeting of the hole itself for line and distance, without forcing you to aim short. Every putt needs to drop.

Make This Part of Your Game.

Too aggressive is dumb for making long putts, because it narrows the hole and results in too many three-putts. Lag putting does not mean aiming to stop your ball short of the hole, but aiming for the hole with a controlled speed that maximizes the effective hole width. To minimize three-putting, learn fine distance control, but forget the six-foot circle target. Use the cliff image or something similar to avoid blowing the ball too far by the hole without altering your targeting focus on sinking the monster. And broaden your comfort zone for comebacks, too!

 For more tips and information on putting, including a free 10,000+ database of putting lore and the Web's only newsletter on putting (also free), visit Geoff's **PuttingZone** website at http://www.puttingzone.com, or email him directly at geoff@puttingzone.com.