

# PGA Touring Pros Evaluate Putting Greens for Spike Damage

Researchers seize an opportunity to learn about the performance of spikes.

BY THOMAS A. NIKOLAI



During a practice round of the 2002 Buick Open at Warwick Hill Country Club (Grand Blanc, Michigan), 70 PGA Tour pros evaluated the damage to putting greens created by various combinations of golf shoe outsoles and either metal or alternative spikes.

The original Softspike swirl was created as a green-friendly design for winter golf in the Pacific Northwest. The concept of a green-friendly spike soon took hold, and approximately a decade ago, a handful of country clubs banned the use of metal spikes at their facilities. Those actions initiated an alternative spike revolution for the game of golf.

Initially, numerous alternative spikes hit the market with green-friendly designs. However, just being green friendly wasn't enough. Alternative spikes that can survive in today's market

are not only friendly to both putting greens and infrastructure, they also must have the best possible traction for golfers. Opponents of early alternative spike designs regularly cited lack of traction and often complained, "The pros wear metal spikes, and I should be able to wear them too."

## TURNING TIDE

It can be argued that the PGA Tour is the last bastion of the metal spike-wearing golfer. However, the majority of PGA Tour pros freely choose to use alternative spikes. It would surprise

most golfers to learn that the majority of professional golfers wear the Black Widow and fewer than 25% of the pros were wearing metal spikes at the conclusion of the 2002 season.

Recall those debates that took place in your locker room and clubhouse when your course entertained banning metal spikes? Imagine what those debates would be like if your entire membership made their living playing golf. Also remember that the Rules of Golf do not allow golfers to repair spike marks (uplifted turf or indentations) in the line of a putt. Certainly, PGA Tour

**Table I**

Treatment list for the 2002 Buick Open Spike Study

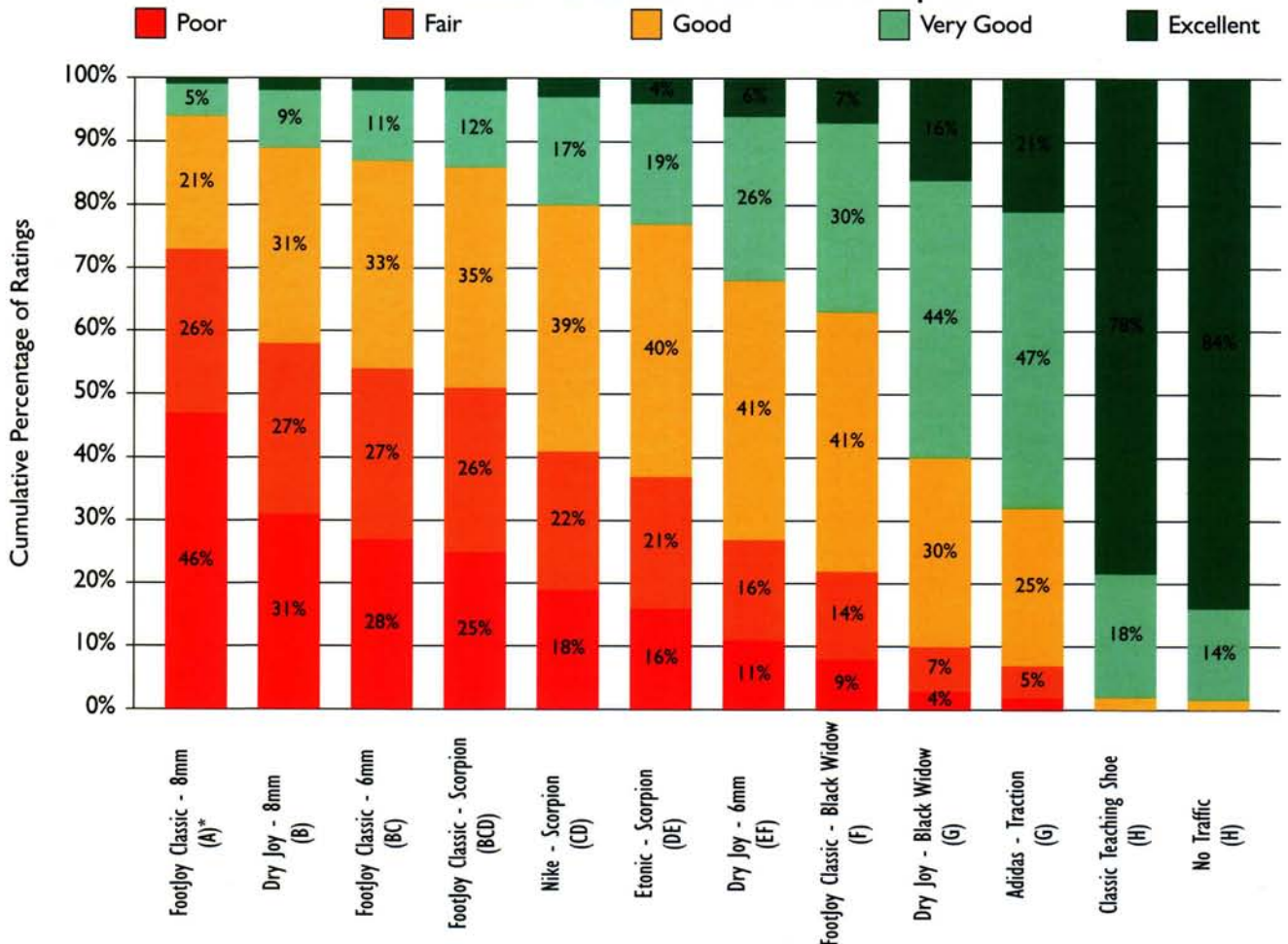
Treatment Combination	
Spike	Outsole
1. 8mm metal	FootJoy Classic
2. 8mm metal	FootJoy Dry Joy
3. 6mm metal	FootJoy Classic
4. 6mm metal	FootJoy Dry Joy
5. Black Widow	FootJoy Classic
6. Scorpion	FootJoy Classic
7. Black Widow	FootJoy Dry Joy
8. NONE	FootJoy Classic Teaching Shoe
9. Scorpion	Nike
10. Scorpion	Etonic
11. Traction cleat	Adidas
12. (CHECK) None	None

Traffic was applied to each plot to represent 70 rounds of golf around the cup. Each person who applied traffic wore every pair of shoes (all wore a size 11 shoe) in the study and applied the same number of footsteps in a similar manner for each plot.

At the end of the traffic period, the plots were rated using a "report card" scale of A through F where:

- A = Excellent (No visible wear due to golf spikes or sole)
- B = Very Good
- C = Good (Visible foot traffic but acceptable wear)
- D = Fair
- F = Poor (Suggest banning spike/sole due to excessive wear)

**Professional Golfers' Evaluation of Golf Shoes and Spikes**



\*Bars sharing a letter are not significantly different (P < 0.05).

pros have a great deal at stake when they are putting, and it is understandable if they are concerned about what their competitors are wearing on the soles of their golf shoes.

## TO THE RESEARCH DRAWING BOARD

With this friendly banter taking place in locker rooms, the PGA Tour contacted Michigan State University regarding alternative spike research. It was decided a study would be set up for PGA Tour pros to rate greens trafficked with the most common golf spike/sole designs worn on the PGA Tour to determine from the professional perspective the extent of damage done by the various spikes and spike/outsole combinations.

The study was a randomized block design with 12 shoe/spike designs, and each treatment combination was replicated three times. It was conducted on the Warwick Hill Country Club nursery green on August 6, 2002, during a practice round of the Buick Open in Grand Blanc, Michigan. The putting green was a mixture of creeping bentgrass and annual bluegrass (*Poa annua*) mowed at 0.125 inch. The maintenance practices of the nursery green were similar to those practiced on all the other greens of Warwick Hill Country Club.

Approximately 70 PGA Tour pros took the time to rate the plots. From their comments it was clear that this was a serious matter to them. Many politely commented on why they preferred either the alternative spike or the metal spike as they carefully investigated the wear on the plots. One chuckled, "Those wearing metal spikes should have to use wooden clubs with steel shafts." Another argued that those who do not wear metal spikes should be able to repair spike marks, but those who wear metal spikes should not be able to do so. Yet another pro claimed that alternative spikes were around only because metal spikes caused damage to infrastructure. Nevertheless, all partici-

pants were cordial, and nearly all of them expressed their gratitude for our efforts.

## HOW DID THEY PERFORM?

Results of the study are presented in Figure 1. Note that every rating is accounted for and the cumulative percentage of the responses is on the y-axis. The x-axis has the treatments expressed from the most visible damage (left) to the least visible damage (right). Treatments sharing the same capital letter in parenthesis are not statistically different from each other.

The 8mm metal spike in the FootJoy Classic was the least favorable among the pros, with 46% rating the treatment as poor. The no-traffic check plot and the FootJoy Classic teaching shoe were the most favored treatments, with excellent ratings of 85% and 78%, respectively.

Results also indicate the golf shoe outsoles (bottoms) can make a difference. The FootJoy Classic has a smooth (or flat) outsole, while FootJoy Dry Joys have some protrusions or built-in studs in their outsoles. Golf shoes with these traction elements built in are referred to as "combination outsoles." Numerous individuals see the traction elements built into the outsoles and understandably assume these aggressive-looking protrusions would cause additional damage to a green. However, results from this study indicate otherwise.

Note that the 8mm and 6mm metal spikes, as well as the Black Widow in the Dry Joys combination outsole, created less visible wear than the 8mm and 6mm metal spikes and the Black Widow in the FootJoy Classic (flat) outsole, respectively. This makes sense, since the increased points of contact on the combination outsole decreases the amount of pressure at each point. This is not unlike snowshoes increasing the surface contact area allowing an individual to travel atop snow. However, note that all combination outsoles in the study performed equally well as the Nike combination outsole with the

Scorpion cleat and were not significantly better than the FootJoy Classic with the Scorpion cleat.

Other interesting comparisons include the Black Widow and the Scorpion cleats inserted into the FootJoy Classics. From this cleat comparison in identical outsoles, it is apparent the pros felt the Black Widow was more green friendly than the Scorpion cleat. In regard to combination outsoles with different cleats inserted into them, the Adidas with the Traction cleat and the FootJoy Dry Joy with the Black Widow cleat were seen as more green friendly than the Etonic and Nike outsoles with the Scorpion cleat inserted into them.

The 6mm metal spike in the Dry Joy combination outsole received significantly better ratings than the Scorpion spike in the FootJoy Classic and in the Nike combination outsole. Additionally, it was just as green friendly as the Scorpion cleat in the Etonic and the Black Widow in the FootJoy Classic.

## OUTSOLES MAKE A DIFFERENCE

The majority of the PGA Tour pros have freely switched to alternative spikes. The results of the study at the Buick Open indicate that the 8mm metal spike in smooth-sole shoes causes the most unfavorable putting surface. However, the type of outsole (smooth vs. studded) does make a difference. In fact, 6mm metal spikes were rated as less damaging to the putting surface than two other non-metal treatments when the 6mm metal spikes were inserted into a pair of Dry Joys.

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THOMAS NIKOLAI, PH.D., is a turfgrass specialist at Michigan State University and the associate coordinator of the two-year golf turfgrass management program.