

TURFGRASS TRENDS

BUNKERS AND PHYSICS

The Great Rake Debate

Should rakes be placed in or outside bunkers?
Or partially out? A golf course architect studies the options

By Forrest Richardson, American Society of Golf Course Architects

In or out? That has been the basic question ever since bunker rakes came into popularity about 70 years ago. However, there is the partially-in and partially-out option. My term for this is the "propped position." It's amazing I can write an entire article about bunker positioning, but it's an important topic. So, let's get to all you want to know about bunker rakes and some basic physics.

Besides the details of the tines, length of shaft and grip design, where to place the bunker rake has been an age-old question. Sure, we can discuss some of the innovations — subterranean compartments where rakes become the subject of hide-and-seek, looping handles that keep most of a rake above the turf, and the old rake and spike with its weapon-like, spear-fishing design. While these may work for some courses, the estimated 1.3 million bunkers worldwide are destined to have a simple, low-cost rake. And so, the question remains: Do we leave the rakes out, in or propped?

Honestly, I don't have a passion for bunker rakes. I somewhat prefer the no-rake-at-all approach, where hazards are ... well ... hazards. However, in an era where golf has come to accept the wooden tee (not widely used until well after World War II), precision-engineered cart paths (whatever happened to charming gravel trails with fescues popping up between the ruts?) and, at last count, the more than 14,000 corporations that manufacture products specifically for the golf industry, the saga of the ideal bunker rake positions will undoubtedly go on until we scientifically quantify our options.

The concerns with bunker rakes involve interference to play, ruling complexities, access to the golfer, aesthetics, interference with maintenance, wear and tear to the rake, speed of play and game traditions. This last concern has to do with the likeliness of a rake to change the outcome of a match compared with having no rake at all. Frankly, I feel this to be among the most essential questions. A rake is movable obstruction and my view is that movable obstructions are clutter to a golf course. The game is better off when we have fewer such obstructions.

I've used two forms of data to approach the question. The first is the physics of bunker rakes when set in each of the three positions. The three figures on the following pages show the linear dimensions of contact each rake has with the golf course for each position. The second data set is a grade given for each of these areas of concern. By canvassing rules officials, course operators and other experts, the goal was to arrive at an objective and fair grade (A, B, C, D or F) for each of these

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At Peacock Gap Golf Club in California, bunker rakes are left in the propped position where they are easily accessible and yet out of sight until needed.



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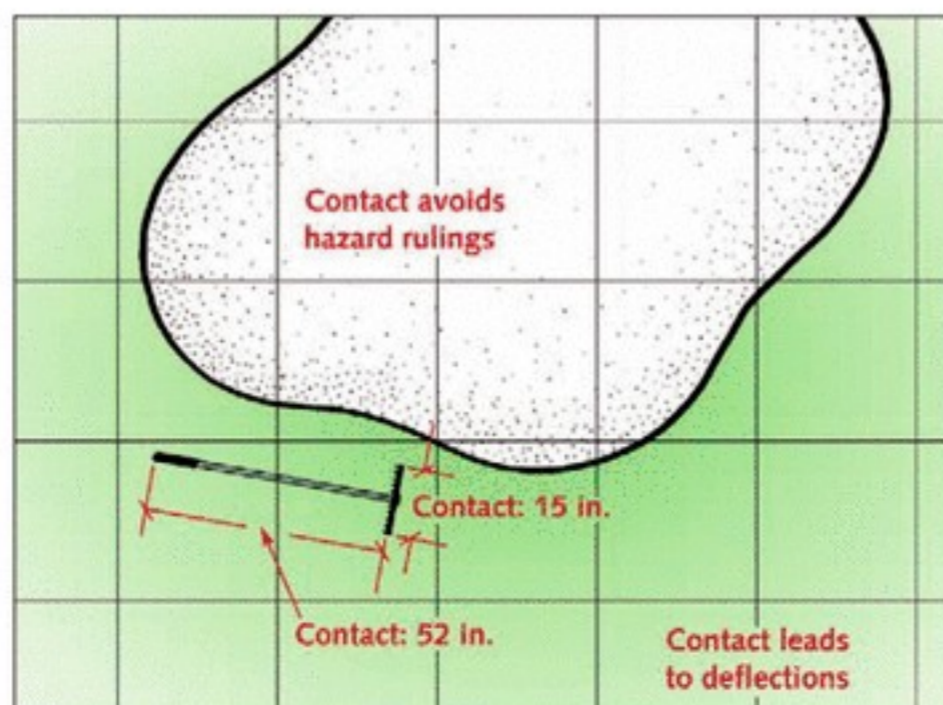
factors. After grading each concern for each option, an average grade was calculated for the three positions.

Outside the bunker

This is the preferred position of the United States Golf Association, and it seems to be the most common policy in effect. Simply put, the USGA opines there are far less worries and hassles of interference with a ball when the rake or any portion is not in the bunker itself. They promote that rakes be aligned parallel to play, although few balls I know have been trained to follow this alignment.

The issue of accidentally smoothing the sand while picking up the rake is eliminated with a rake outside the bunker. So, too, is the odd circumstance when moving a rake causes a ball in a bunker to move. When this occurs, and replacing the ball is not possible because of a steep slope, the golfer's only option is to incur a stroke penalty under the unplayable lie rule.

However, there are downsides to the rake



being left outside. They include the potential deflection of a ball — either toward the bunker or away from it — and several other undesirable conditions.

Here are my grades:

- **Interference to play** — Rakes lying outside bunkers have significant ground contact with the course. *Grade: C*
- **Ruling complexities** — Very few issues. *Grade: A*
- **Access to the golfer** — Rakes can be difficult to find among some grass heights. *Grade: B*
- **Aesthetics** — Not bad, but can be unsightly. *Grade: C*
- **Interference with maintenance**: Requires undue labor during mowing. *Grade: D*
- **Wear and tear to the rake**: Among the worst and wettest of places. Lessens rake lifespan. *Grade: D*
- **Speed of play**: Any difficulty in finding rakes may be outweighed by the less cumbersome ruling hassles. *Grade: B*
- **Game traditions**: The rake has the potential to deflect a ball toward or away from the bunker, constituting an artificial influence to the game that may change the outcome of a match. *Grade: D*

OVERALL GRADE: C+

Inside the bunker

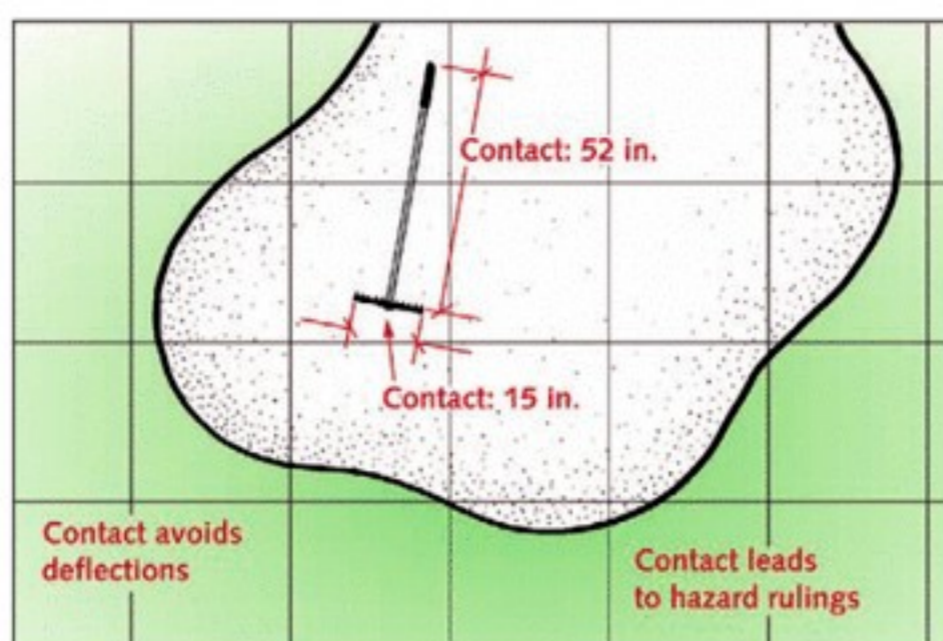
My take is this seems to be driven by aesthetics and maintenance at many clubs. With the rake placed back in the bunker, it is hidden from the tee, yet it is easy to find when we need it. Obviously it does not impede mowing. In contrast to leaving the rake entirely outside the bunker, this option has the potential for the most troublesome rulings.

Since we can't expect every player to be diligent in making sure the rakes are not awkwardly lying along steep slopes, there is the risk of balls coming to rest against a rake in spots where it may be impossible to replace the ball, take a stance or find a spot within the bunker that's not near the hole.

Here are my grades:

- **Interference to play** — Rakes lying entirely within bunkers have significant ground contact with the course. *Grade: C*

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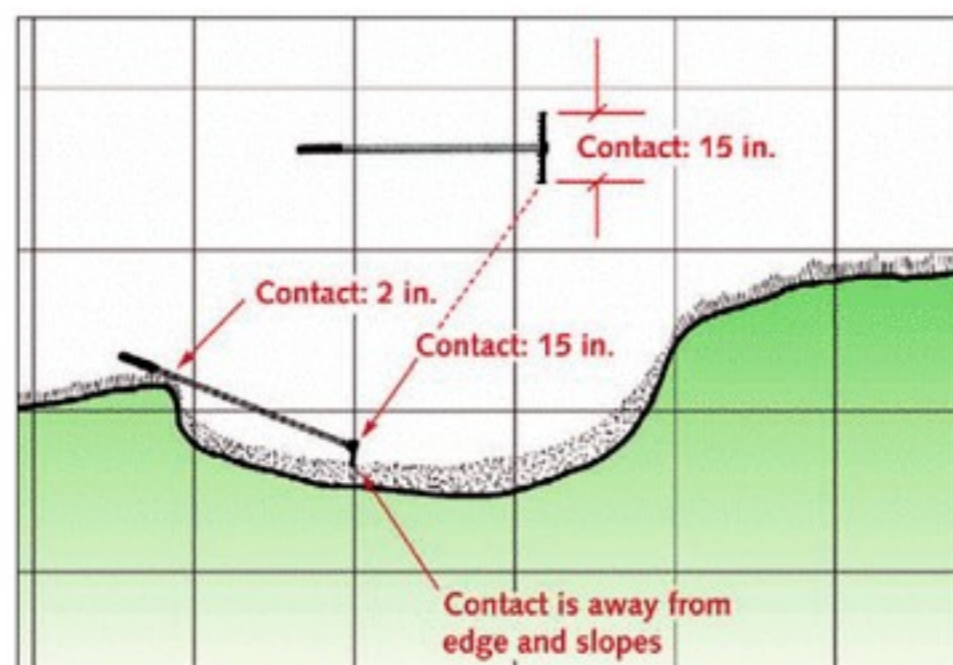


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- **Ruling complexities** — Greatest potential. *Grade: F*
 - **Access to the golfer** — There's potential to disturb more sand than necessary to reach the rake. *Grade: D*
 - **Aesthetics** — Mostly, it places the rake out of view. *Grade: A*
 - **Interference with maintenance**: Avoids the necessity of having to pick up rakes during mowing. *Grade: A*
 - **Wear and tear to the rake**: Not ideal. Not only wet, but also gritty. *Grade: C*
 - **Speed of play**: Although easy to find, it may involve more raking time and infinitely more ruling issues. *Grade: C*
 - **Game traditions**: While the rake may involve a ruling, it's not likely to deflect a ball out of a bunker. A ball resting against a rake within a bunker would likely be somewhere else in the bunker had the rake not been there. *Grade: C*
- OVERALL GRADE: C+**

Propped position

In this position, the rake is placed in the bunker with the tines down and the handle propped on the lip. Ideally, the length of handle will be a foot or less beyond the lip so it can be grabbed,



yet does not place the tines too far up on steeper slopes. The theory holds there's far less surface contact with the course.

While a rake lying on the ground or sand involves 67 inches of surface contact, the propped rake has just

17 inches, or 75 percent less surface contact. While the variable of a rake interfering with a ball in flight is at play with the propped rake, balls in and around bunkers are more apt to roll and bound near the ground, so this factor is rather insignificant.

- **Interference to play** — The propped rake has the least amount of ground contact among the three positions. *Grade: B*
 - **Ruling complexities** — While significantly less than with a rake entirely within a bunker, there can still be issues. *Grade: C*
 - **Access to the golfer** — Among the best, both visually and with the exposed handle that's easy to reach. *Grade: A*
 - **Aesthetics** — Mostly out of view. *Grade: B*
 - **Interference with maintenance**: Avoids having to pick up rakes during mowing. *Grade: A*
 - **Wear and tear to the rake**: Ideal, with the grip and handle not having ground contact. *Grade: A*
 - **Speed of play**: Easy to find, but may involve ruling issues. *Grade: B*
 - **Game traditions**: May involve a ruling, but only remotely will the rake deflect a ball out of a bunker. *Grade: B*
- OVERALL GRADE: B+**

I hope I've provided you with a pragmatic assessment of bunker rake positions — part scientific, part physics and part as if Olympic gymnastics judges were in charge of the scores. Certainly, not everyone will agree with my findings. For some, a more in-depth evaluation at their courses may show the issues of maintenance or aesthetics deserve less or more weight. For others, ruling complexities are so rare they should not be a primary influencing factor. A worthwhile exercise might be to assign your own grades.

But, in the end, there are compelling reasons to take a serious look at the propped Position for bunker rakes. The great rake debate may be closer to resolution than ever before.

Forrest Richardson is a golf course architect based in Phoenix. In addition to his work for clients across the United States, Mexico, Canada and Europe, he's the author of three books on golf architecture: "Bunkers, Pits & Other Hazards," "Routing the Golf Course" and "Of Course." He can be reached at www.golfgroupltd.com.