## WELCOME TO HOT SPOT PUTTING!

Hot Spot Putting is the latest training app specifically designed to give the golfer an interactive putting environment for developing green reading skills in putting.

Hot Spot Putting will help you determine the strategy of a successful putt by directing you to the area of a putt where the ball will have the most chance of entering or contending with the hole. This area is called the HOT SPOT.

All you need to do is enter the information about the putting circumstance, and the HOT SPOT of the putt will be displayed.

The Hot Spot Putting App will help you develop your putting skills, by providing an environment to interpret the putting circumstances, focus attention to the primary and secondary forces on a putt, provide instrumentation for calculating the target area, assist with the strategy of the putt and document the calculations for later recall or interpretation of the putt.

We believe that when successful putts are *accompanied with the objective data that supports them*, over time, you will become keenly familiar with the putt conditions and know how to hit them when similar putts are encountered in the future. (We know this as "feel".) As a result, you will gain interpretative skills for predicting the effect of slope, green speed and distance, as well as secondary modifying forces on a putt.

We believe that building your putting skill through an interactive interface, will build your putting skills significantly faster, than with the traditional empirical methods of trial and error… oh yeah.. and by the way, it's fun!

Please note:
***This app is designed to be used strictly in practice and is not intended for handicap or tournament play!***

## CONFIGURATION/SETTINGS

There are settings that adjusts HOT SPOT Putting to how you would prefer to use it. These settings are adjusted in the **SETTINGS** menu of your mobile device.

*CAMERA VIEW*

The application will put the camera image within the Putting/Slope Gauge area of the display. This is useful for capturing the environment of the putt for documentation of the local condition.

You may also choose to turn the camera off, and a green background will be displayed in the Putting Slope area as a preference.

*UNITS*

The unit of measurement can be set to Imperial or Metric units. Distance selections will be in feet or meters. Hot Spot calculations will be in feet or inches (selectable) for Imperial units. If you select Metric unit of measurement, centimeters or meters (selectable) will be selectable in the program.

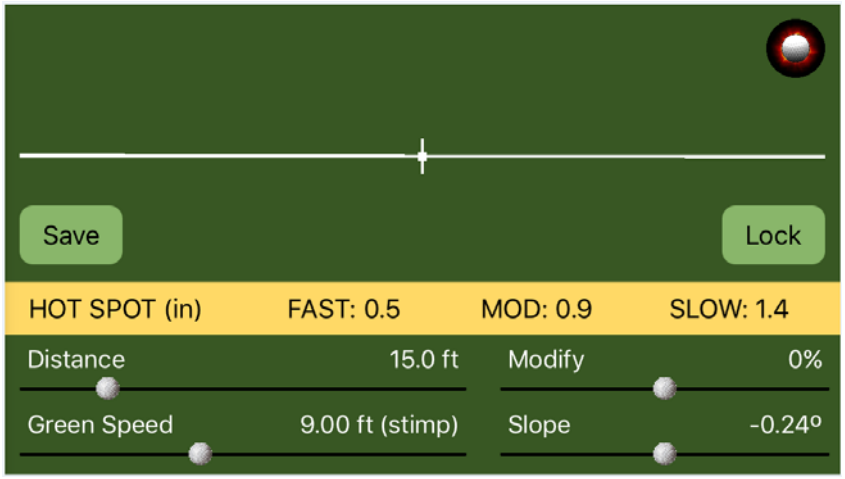
*Convert Green Speed to Metric*

Green Speed can be displayed a unit in feet or meters independent of the unit of measurement selected for the program. **ON** is for Metric, **OFF** is for Imperial.

## HOT SPOT PUTTING

The following information is a description of the controls and how to use them. Please note that values entered do not need to be precise, and every effort should be made to become very accurate with estimating distances, as that is a very important part of golf (especially around the green).

This is the main screen for the interface (unlocked mode):




**DISTANCE** Select the distance of the putt by sliding the indicator to the estimated distance (in feet/meters) for the putt. Players typically pace out the distance with their "golf" stride. Range is 5 to 60ft.

**GREEN SPEED** Select the green speed of the green by sliding the indicator to the proper green speed for the current green. Range is 5ft to 15ft.

Green speed is typically determined using the stimp reading method as conducted by the course greenskeeper. If the green speed is not known, use these guidelines for the most likely green speed:

| Course Type | Slow conditions | Normal Conditions | Fast Conditions |
|---|---|---|---|
| Public courses | 7.0 | 8.5 | 9.5 |
| Private courses | 9.0 | 10.0 | 11.0 |
| Professional level courses and tournaments | 10.0+ | 11.0+ | 13.0+ |

Wet and dry conditions will affect the speed of the green significantly, so depending on circumstances, green speeds can change in the short term.

Players generally get a good feel for the relative speed of a green, and can enter the estimated speed into the calculator and still achieve successful results.

## MODIFY

Select a value to modify the putting calculation by sliding the indicator to the desired amount of modification for the putt.

There are several conditions that modify the break of a putt, and these conditions will affect the ball path to varying degrees.

Secondary modifying forces on a putt are:

*Gradient*: Uphill putts break less. Downhill putts break more.

*Grain & Grass type*: Bermuda grass holds putts on line when against the grain, Bent grass has less of an affect. Depending on the putt and the direction of the grain (and type). The Hot Spot can be affected by its influence.

*Wind*: Moderate to severe wind above 10-15 miles per hour coming from a specific direction can affect the path of a putt (depending on green speed). Swirling winds can also affect the putt. Please do not test this theory by putting during a tornado.

*Undulations*: These intermittent slopes affect the direction of the ball depending on the size and severity of the undulations.

*Drain Line*: There can be primary and secondary drain lines in greens. (where water will drain to). The angle between the putt location and the drain line could have a significant influence on the HOT SPOT.

The **MODIFY** variable can be employed and allows up to +/-75% modification to the calculation of the putt, based on the local conditions at play. Player is to develop their judgement as to how these forces influence the hot spot and what adjustments to make.

See the **MODIFY ADDENDUM** at the end of the Instructions for more information about the use of Modify with typical putts based on a putts proximity to the hole.

## SLOPE

Slope is a primary force effecting the putt and is critical in determining how a putt will break.

To obtain a slope reading, hold the unit such that the unit aligns with the perceived slope of the impending shot. Many times, the slope of the putt is revealed at the hole (shorter putts). The hole will show the slope as the cup's vertical penetration shows an angle with the green at the cup. (this is best viewed from a distance of about 18-20 ft.). The alignment could look like this (sample view) :

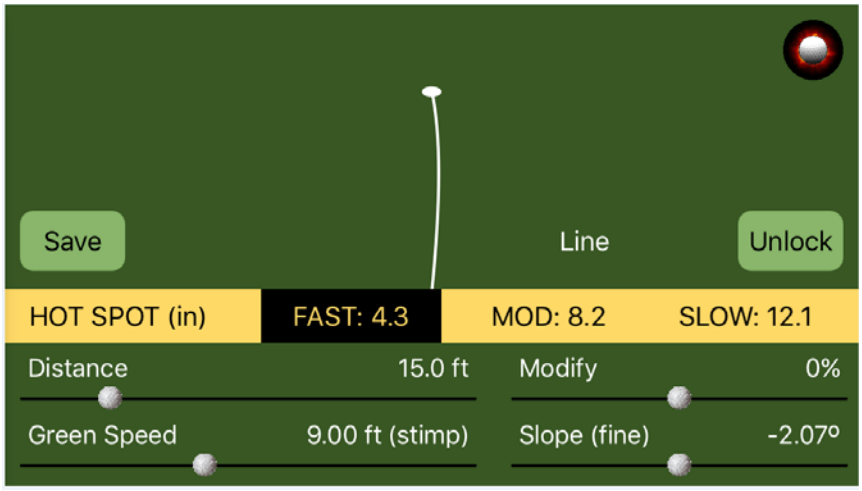

Figure 1. Slope Alignment

Other times, the slope of the putt is revealed in the general observation of the high point and low point of the green or an area of the green (longer putts). The player needs to get a feel for the overall slope and align the unit with the best indicator of slope for the shot. (Maybe plumb bobbing wasn't so mysterious after all.)

You could also ***place the mobile device on the surface of the green at the hole! (dry conditions please!)***, or location that is most indicative of the slope of the putt. Experiment with different positions to gauging slope and find what works best, this will help you in evaluating putt conditions in the future!

When the Slope is obtained, keep the unit steady and allow a few seconds for the slope gauge to settle. Press the **LOCK** button to lock the slope into the calculation. You can still change other putt values when the Slope value is locked, as well as the unit of measurement. Press the **UNLOCK** button to release the slope value from the calculator.

Here is a screen shot of the unit in **Lock** Mode:




## SLOPE (FINE)

Slope (fine) control allows the user to adjust the captured slope in fine increments.

## LINE/BREAK

When the user selects the **LOCK** button, the unit displays the line of the putt as an overlay to the putting area. Press **LINE** or **BREAK** to change the view from the target line to the estimated break line to the hole.

## HOLE DRAG

While in **LOCK** mode, Press and Hold the overlay graphic of the Hole. A larger ring will appear. Drag the ring to another point on the screen area (match to camera view of the hole). This will give you an estimated offset distance for the putt. Hole Drag resets when **UNLOCK** is pressed.

## HOT SPOT

As the values are entered for the putt, the **HOT SPOT** is displayed in the 3 key fields (as measured from the center of the cup). **FAST**, **MOD** (Moderate) and **SLOW**. These fields indicate the offset of the putt *and the corresponding ball speed condition for that offset.*

> *The proper combination of the ball speed and direction within the **HOT SPOT** will determine the degree of success of the putt.*
>
> **SLOW** is the ball speed at which the largest amount of break is warranted, and requires that the player hit the ball slower to the hole. (visualize the ball entering the cup and only hitting the bottom of the cup using the gravitational effect on the ball). **FAST** is the speed at which the

least amount of break is needed. It is used for conditions that require a faster ball speed. (visualize the ball hitting the back of the cup when entering the hole using the kinetic energy of the stroke). **MOD** (Moderate) is the ball speed at which the ball enters the cup, as the ball decelerates and gravity has taken effect on the ball (visualize the desirable pace of the moderate speed putt entering the hole).

**The area between the FAST and MOD is the aggressive putt area. The area between MOD and SLOW is the LAG putt area. The range between SLOW and FAST is the "HOT SPOT" for the current putt.**

The default unit of measure for the HOT SPOT is inches (or centimeters if using metric). Press **HOT SPOT** and the unit of measure will change to Feet. This will be handy for longer putts with larger offsets.

To display the offset of a particular putt's ball speed, press the data field for **FAST**, **SLOW** or **MOD** and the **LINE/BREAK** overlay graphics will update for the current offset calculation.

When practicing, it is advised to mark these areas adjacent to the hole (you can use a ballmark or tee). Pick your line within the HOT SPOT depending on the circumstances of the putt. See Figure 2.

## SAVE

The **SAVE** function allows the user to save a calculation to the **HISTORY PAGE** (see below). You can view the putt data and photo on the History page. (you can also screen capture the putt information using your devices screen capture function).

## INFO

Press the  button to view information for HOT SPOT PUTTING. A Side Menu Bar appears and displays icons. Here is a description of the menu bar features:

1. **Help**. Hot Spot putting directions (but you already figured that out).

2. **History**. When you press **SAVE** the data from the putt is saved in the HISTORY File.

When using the **CAMERA** view and saving the putt information a camera icon  will appear in the History entry line. Press the Camera icon  to view the captured photo from the putt calculator. To delete an entry, slide the entry to the right and press **DELETE**.

3. **Putting Exercises**. There are a number of excersizes to improve putting skills. Try these out on a putting green near you.

4. **Putting Games.** There are a number of putting games that utilize the Hot Spot as part of the strategy of the game. Try these out to see how you fare. 20% of the winnings go to the house.

5. **Terms & Conditions.** Yep, we have them too.

## CALCULATING AND PICKING YOUR LINE.

When the user enters the data for a putt into the calculator and determines all the conditions that are influencing the putt, the player is has determined where the Hot Spot for the putt is located. In practice, it is recommended to mark the 3 points adjacent to the hole to provide target areas for the putt. The 3 points when marked, will provide 2 “lanes” to the hole for the ball. The inner lane is the fast lane, the outer lane is the slow lane. The middle section when the center mark is, is the moderate area.

Hitting the ball into the “Slow Lane” will allow more gravitational effect on the ball. This area of the hot spot is recommended for higher stimp greens (10.0+), higher slope greens and downhill putts.

Hitting the ball into the “Fast lane” will reduce the gravitational effect on the ball. This is recommended for slower stimp green and uphill putts.

Hitting the ball with and intended “MOD” (moderate) speed, the user would aim at the center area of the HOT SPOT. This is recommended for most slightly sloped greens of most speeds. As a point of reference, the moderate speed putt is about 5ft/second on an 8.5 stimp green.

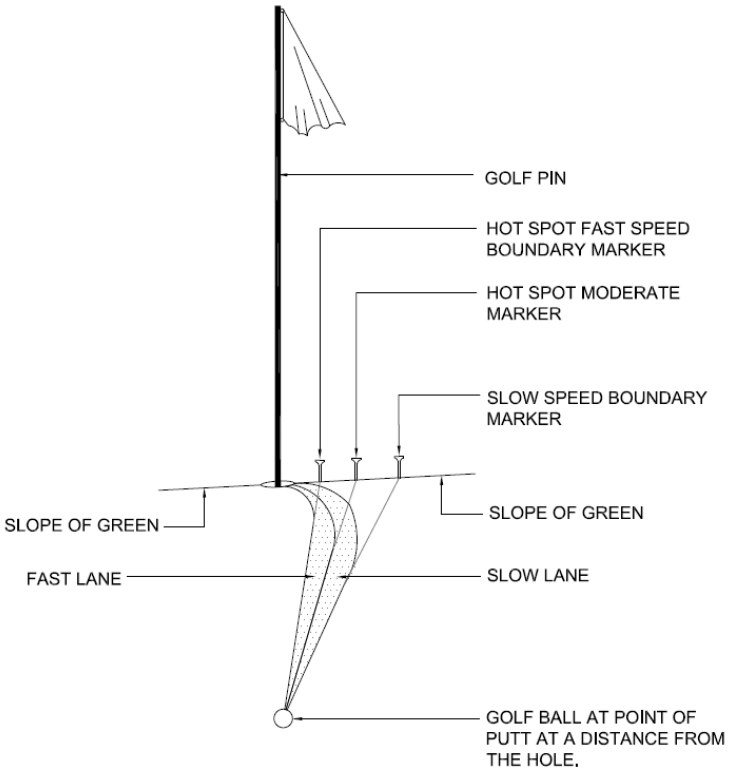



Figure 2. HOT SPOT PUTTING MARKER DETAIL

See additional information on this in the HOT SPOT MODIFY ADDENDUM.

## HOW DOES HOT SPOT PUTTING HELP?

Hot Spot Putting will help develop your putting skills in a number of ways:

1. Hot Spot Putting provides objective putting information to work with, based on the actual conditions of a putt, with a specific calculation that tells you where the Hot Spot is.
2. Hot Spot Putting develops the discipline to consider primary and secondary influencing forces in a putt. You enter the information, receive feedback, and make a conscious decisions/commitment on final line and speed of the putt.
3. Hot Spot Putting uses objective slope information in degrees. Over time, you will see slopes and start to identify these degrees in regular play. You will develop a better feel for the combination of slope and speed of a putt.
4. Hot Spot Putting consistently gives you the same results regardless or course type, location or player's emotion! With a defined target that is objective, you'll witness the result of the putt and objectively compare it to the calculation. Over time, the discipline of managing a putt's variables becomes part of the players putting discipline. Less questionable putts are encountered. Greater confidence, and accuracy is the result.

5. Hot Spot Putting still needs you to determine the final target line in coordination with a defined ball speed within the Hot Spot. A player's talents are still needed to execute the proper direction, perform good putting technique and produce the proper ball speed envelope. The player must commit to these disciplines. Many times, the player is non-committal to the putt due to the mystery of where and how hard to hit a putt. With HOT SPOT putting you will demystify putting forever.

Use this unit on your local practice putting green and have some fun. Your first session will be more orientation with the app, but in time, you should quickly become proficient at the controls and the process. After a time, you will start to understand the nuances of distance, slope, green speed, secondary influencing forces and ball speed for a putt. Work with the unit and look for the Hot Spot. Sometimes the putt is a little more complicated than it looks, and the hot spot is harder to determine. This will also develop your critical skill in green reading.

Once you see the calculations start to hit, you will see your putting discipline and confidence increase on the course and your scores should reflect this improvement.

Build your putting skills. Build your confidence in putting with Hot Spot Putting.

Good Luck and Happy Putting!

# MODIFY ADDENDUM

### USING THE MODIFY FUNCTION (ADVANCED APPLICATION)

The **MODIFY** function is a handy feature to change the response of the calculation to fit circumstances where secondary forces will affect the roll of the ball.

The most common affect is gradient (straight uphill or downhill putt). This addendum will address strategy of using **MODIFY** to address gradient. Gradient for the purposes of this addendum is the grade of the putt going uphill or downhill *from the perspective of the drain line below the hole*.

The drain line of a putt is the line at which a putt will ascend or descend the green in the straightest manner allowable by the surface of the green (within 2.125" variance; ½ cup size). This line is very important when strategizing putts.

Part of the players putting skill is to determine by eye, where the drain line is. Usually it is visible by analyzing the high point and low point on opposite sides of the cup and drawing an imaginary line through those points.

Depending on the severity of the grade of the drain line, gravity will have a proportional effect on the putt. If 0 degrees is the low point of the drain line, there are approximately 360 degrees of angular putts possible from a given radius from the hole.

Depending on the angle of the putt to the drain line (0 degrees) a MODIFY value should be applied to the putt calculation. Here is a suggestion on the Slope angle and Green speed as to when to apply MODIFY a calculation for a putt circumstance that includes gradient.

| Green Speed (ft) | Slope value requiring Modification |
|---|---|
| 5.0-7.5 | 5 degrees or higher |
| 8.0-11.0 | 4 degrees or higher |
| 11.5- 15.0 | 3 degrees or higher |

Depending on the angle of the putt, the **MODIFY** value should be employed in the calculation. The player needs to become familiar with the relative angle of the putt to the hole and to what extent a modification to the calculation needs to be employed.

Refer to Figure 1 for the angle ranges and the recommended modification values.

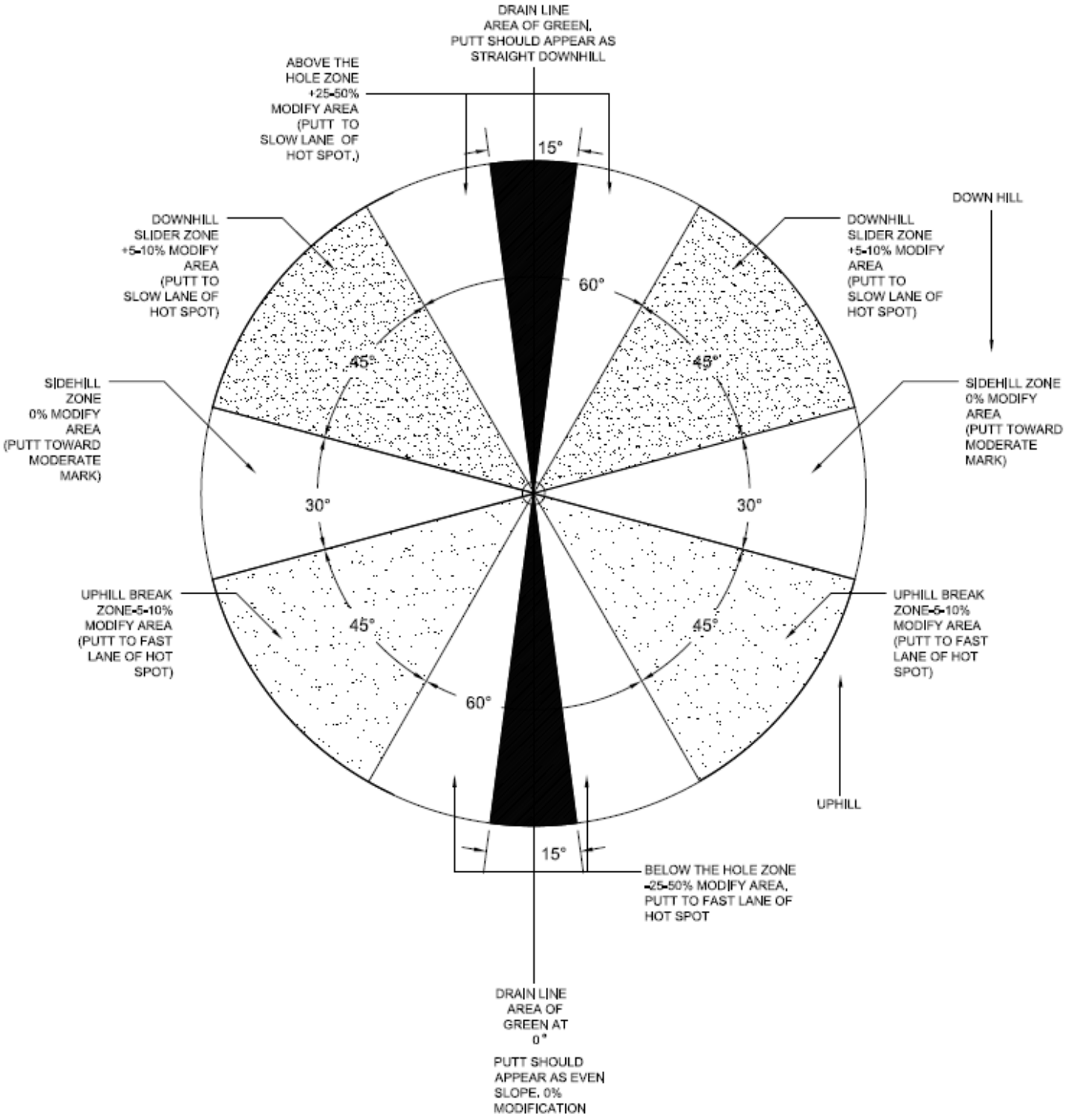



Figure 1. Putting Zones
(values can vary depending on conditions)

Although this may seem complicated, the logistics of the positions are shown here are relatively easy to establish in practice. Once the 0 degree drain line is known, the uphill drain line point is known. These are primary points. The primary right-angle points for side hill lie should be easy to determine at 90 degrees from the hole respectively, and the slider and breaking zone are in-between the primary points. Having exact angular measurement is not necessary, estimated area will suffice and an appropriate MODIFY value should be entered.

This can be a very quick adjustment after getting used to the position of the ball relative to the drain line of the putt. Remember it is generally used for faster greens and more sloped putting circumstances.

END OF ADDENDUM.