



Joe Barone, foreman, stands in steep depression separating levels of the ninth green at the Yale University Golf Course, New Haven, Conn. Adequate green size on either side makes possible such a steep depression, and yet it is considered fair.

A Golfer's View of Greens

by WILLIAM C. CAMPBELL

As Ben Hogan said, "Golf is two games—one played in the air, the other on the ground." Ben has found that the second game is the more frustrating of the two, if not the more difficult. More strokes are taken on the green than elsewhere. The percentage of the green's importance to the overall game is higher among the better players, even if they are good putters in most cases, so the green is naturally the focal point of competitive golf. Appropriately, the green requires more money for construction and more for maintenance than any other part of the course; certainly good greens are the best investment a course can have.

Having played in major tournaments for 30 years, including 47 national Championships here and abroad, I have inevitably acquired strong feelings about golf and golf courses, particularly greens. So please forgive me if I forego facts in favor of opinion and prejudice. Just because golf courses are better than they used to be—or at least there are more good courses now—and just because the science of construction and maintenance has improved so much shouldn't deny

me the golfer's self-appointed privilege of criticism.

The competitive golfer cannot afford negative thoughts, nor can he risk the loss of confidence by blaming himself. So with the good I shall mention the bad, and be so impolitic as to cite examples of each among courses that are known to golfers everywhere.

As to size of green, I regret the apparent trend towards hugeness. Excessive size adds to the cost of both construction and maintenance, but my gripe is that it puts too much emphasis on putting. Of course big greens aren't new; the Old Course at St. Andrews, for example, combines the 5th and 13th greens into one putting surface of 43,000 square feet, almost a full acre. The third hole at the Williams Club in Weirton, W. Va., plays from an elevated tee 130 yards long to a fairway that extends 600 yards mostly uphill to a green of some 26,000 square feet. The extreme, I suppose, may be valid as a conversation piece—like the 17th green at Lost Tree, in North Palm Beach, Fla., where a sand trap was built in the middle of the green.

I can see only a few reasons for not having all greens quite small. They should be just large enough to:

1. Accomodate long approach shots to long par-4 holes, and tee shots to long par-3 holes.
2. Offer a number of hole locations so that wear can be spread out.
3. Provide strategic variety to test the player's decision and shot-making.

I prefer greens no larger than those at the No. 2 Course of the Pinehurst Country Club, Pinehurst, N.C. They put a fair premium on accuracy, and yet they fit the requirements listed above.

Also, cups should be changed according to the direction and velocity of the wind, depending upon the degree of difficulty desired and the tactical implications.

As to the shape of the green, I am allergic to the stereotyped square, elevated, slanted back-to-front design, often with traps on the short right and left sides. This design may be fine for drainage and viewability from the fairway, or if the hole calls for a backstop for the ball when the approach is from a much lower elevation than the green. But a habit of such design is without imagination by the architect, robbing the course of its character and the golfer of some of his fun.

However, any indentation into the circular or rectangular green, or any tangential extension of it outward, should be for better reason than just its appearance when seen from above lest the aberration result in just an easy chip if one misses the green itself. I favor the judicious use of knolls, mounds, dips, swales, and yes, traps and water—all strategically located next to or near the green—with the green shaped accordingly.

The 10th hole at the Pine Valley Golf Club, Clementon, N.J., is "made" by the short right bunker—more so because a shot on this short hole can hit well onto the green and still gravitate to the bottomless little pit of sand.

What would the famous 17th, or "road hole" at St. Andrews be without the ledge across the right front of the green, the bunker close in to the left, the old road just over the back, and the green angled to present a thin target? Or all of the Augusta National's par-3's without their strategic bunkering and shapes? Or, among others, Augusta's par-4 ninth without a short left bunker forcing the play to the right where the

ball can be too wide and down hill, or if played too tightly to the front half of the green, can back all the way off? Or Augusta's 11th, without its high fairway mound short and right of the green, kicking the weak second shots towards the water that cuts into the short left side of the green?

Look at almost any green on Pinehurst's classic No. 2 Course: the first hole with its dip short and a steep rise to the center of the green, which is angled to the left around the bunker. The golfer is inclined to play to the right where the ball can kick off the green to uneven ground. As the cup is put farther back on the green, it brings the left bunker more into play. The green narrows towards the back, requiring more accuracy for the player who would get close to the pin—also control, since the green falls away at the back toward pine trees.

Or look at Pinehurst's second hole, where the green is shaped for various pin locations, depending upon the difficulty desired for the long approach. This shot must carry a bunker and mound on the short right side, yet stop short of a swale on the far left, with the green falling away on all sides except where the mound is located between trap and green.

These dips and doodles afford an infinite variety of problems for the golfer who is too bold or too cautious. In fact, the No. 2 Course is typical of the old British seaside courses which is what Donald Ross had in mind when he designed it.

As in all of these examples, it is essential that the green and its immediate surroundings complement one another, with the green often sloping toward the particular problem to be encountered in order to multiply its effect. Thus we are concerned with the contour of the green itself, which combines with shape to create the "character" of the green. Augusta's fifth, sixth and 14th holes offer spectacular contours, making it important for the golfer to approach to the "smart" side of the hole.

One of the most severely contoured greens at Augusta is the 18th, which would surprise the millions of viewers who must wonder if the many putts missed there are caused only by the pressure of trying to win the Masters.

Some of the holes at St. Andrews Old Course would be little remembered except for the contouring of their greens:—for instance, the 12th, a short par-4 with a difficult convex green; and the 18th, with a subtle slope in back and the

treacherous "valley of sin" in front. The famous 18th at Pebble Beach has a green that looks much flatter than it is, and has embarrassed many a golfer.

I don't mind terracing if it allows enough room for a hole to be located on each level, so that a player has a reasonable shot without necessarily putting from a different level. Pinehurst No. 18 is a good example of fair terracing. Augusta's sixth would be a bad example if the hole were located in the back right, which fortunately isn't often done.

The best example is Yale's famous No. 9, a long par-3 to a large, deep green that is bisected by a deep dip, leaving an adequate target and putting area on each side of the dip.

If there is a strong prevailing wind, the green's slope should be designed with the wind in mind. A bad example is St. Andrews' 11th, whose green is so fast and sloped that a strong wind from behind the green blowing downhill (which is usual) can make it impossible to control even the small ball on the putt, or to keep a spinning recovery from the deep trap short of the green from coming back into the sand. Such a green should have at least one protected pin location, and it should be used in such severe conditions.

If a green's speed and slope are unrelated to each other, the results can be disastrous. For example, at Broadmoor Golf Club in Colorado Springs during the 1959 United States Amateur, the No. 1 green (now the 16th of the East Course) was too sloped and fast to be fair; the West Course, where the 1967 Amateur was played, has a number of greens that are too sloped or too fast, or both. The problem was compounded in the 1967 Amateur by the use of a "wet" pin location on a dry day in order that the people who did not finish the previous day's play could complete their rounds using the same cups as the rest of the field.

Also, I would lobby against having too many slopes on any one green, and against having too precipitous changes in slope, unless the hole is a short par-3 or is designed for a short approach shot. Otherwise there is simply too much luck, depending on where the ball lands, especially if the green is hard to the bounce. Good examples of gentle contouring are Pine Valley, and the East Course of the Merion Golf Club, Ardmore, Pa. Bad examples are the Broadmoor's West Course holes No. 6, 7, 10, 12, and particularly No. 8. Such results are usually by intentional

design, but occasionally we see greens that are simply the victim of faulty construction, or are too new to have smoothed out. I doubt that No. 11 of the Broadmoor's West Course will ever be a popular green because of the irregularity of its contouring.

Reading any green on a mountainside, let alone putting on it, is a difficult business at best. The Broadmoor West Course is interesting and scenically spectacular, and the best player won the Amateur there. However, in my judgment it is not yet ready for a national championship. It can take years to age a course properly. On the other hand, the greens of many old courses show undulations that were not contemplated by the architect.

Drainage causes most of these changes, such as we see at The Country Club, in Brookline, Mass. For example, the ninth green in the 1963 Open made for uncertain putting and chipping, and allowed little variety in proper pin location. A putting surface should be relatively flat near the cup—for four or five feet all around, or preferably seven or eight feet. If not flat, at least the surface should be of the same plane near the cup. This is especially important now with the continuous putting Rule, particularly if the greens are large and the first putts therefore are long.

As to the surface of a green, I recommend a combination that will be firm to the pitch, yet fast to the putt. If fairway grass is lush, or such as crabgrass, where it is difficult to impart spin, the greens might be kept softer; but even then the putt should roll fast.

Again, the speed of the green must not be decided independently of the contours. Of course I prefer a smooth surface, but I admit that irregularity of surface influences one's confidence more than it affects the ball. You may have noticed this in playing late in the day when the shadows accentuate heel prints on the greens that you hadn't known were so rough. The best attitude is a positive one, such as displayed by that great putter Deane Beman during the World Amateur Team Championship in Rome in 1964. It was a new course, play was heavy, and several days of rain had left the surfaces brutally uneven. Deane kept putting the ball in the middle of the hole, explaining that the bumps would "average out."

Of course, shoes are much to blame for damage to greens—rather, people who wear the shoes and who walk improperly. I give little



The 13th green at Pinehurst Country Club. The approach is from the left to a small green, and it requires the utmost accuracy when the hole is in the front.

chance for the campaign on behalf of flat rubber soles, since most people (including myself) need more traction, whether on hillside or in wet conditions or simply because of a violent swing. One answer seems to be the counter-sunk (flush) spikes, because the lack of protruding shoulders reduces compaction.

Also, I approve of not allowing caddies to wear spikes at all, or not letting them carry heavy bags onto the green.

If there is much play during any competition, the cup should be moved daily. If there is a big field in a tournament with 36 holes on one day, the cup should be moved midday so that it is in a different location for each round.

Ball divots are still a problem, despite the Rule allowing their repair at any time. Such ball marks are a nuisance for the player and green staff alike. With fewer caddies these days and players therefore more responsible for repairing the damage done by club divots in the fairway and ball marks on the green, I suppose the answer lies in education through efforts by the USGA, the PGA, and various clubs.

With prize money ever higher on the pro tour, and Rules more liberal, are we far from allowing a "putting ball?" Since the ball can be cleaned, (and in the interest of time I see no valid reason why not) the only rub would be spike marks. Even they may be lessened through the use

of fewer and/or smaller spikes. I don't foresee that the Rules will ever allow spike marks to be repaired, for then a round might never be finished.

Grain worries a lot of people. It is a part of bent grass, though even bermudagrass has its nap. I don't object to grain because I grew up with it, and I find that, within limits, it makes putting more interesting. South Africa produces marvelous putters; I think it not a coincidence that greens there are notoriously grainy. But grain should be consistent, i.e., in the same direction on any one green, so that it is only necessary to look at the cup to know all about the grain. Incidentally when cups are changed I wonder if the green staff is careful always to align the grain.

All this adds up to a lot of tender, loving care that a course requires if its greens are to be what the golfer wants and expects. The in-

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William C. Campbell was the 1964 United States Amateur Champion. He has played on six Walker Cup teams and was Captain once; played on four Americas Cup teams and was Captain once; played on the Eisenhower Trophy Team once. He was the recipient of the 1956 Bob Jones Award for distinguished sportsmanship in golf.

redients are design, construction, science, and dedicated work. My home course (Guyan Golf and Country Club in Huntington, W. Va.) will forever bear the imprint of its long-time Green Committee Chairman, R. J. Foley, a professional horticulturist. He rebuilt all our greens and tried eight strains of grass before he found what would grow best in an area known as Pea Ridge (because reputedly even soy peas couldn't grow there). Mr. Foley was a one-man committee for over 20 years, and we still have a one-man Green Committee in C. McD. England, Jr. If you can find the right man and give him 100 per cent authority, you may be as fortunate as we have been at Guyan.

Mr. Foley is the oldest member of the USGA Green Section Committee in both service and age. No one has done more for golf in West Virginia, both as an expert on grasses and as an official in a game which he never played.

There are some incidental points which space will not permit me to discuss, such as the best time for watering being in conflict with

union attitudes; greens shrinking with mowing as more berms are thus created; cutting greens too close, especially convex surfaces such as Oakmont's No. 3 green in the 1962 United States Open; letting greens become too dry, thin, and crusty so that you can actually hear a ball roll (such as Augusta in 1950 on Nos. 10 and 13); topdressing never to be used before a competition, and never as a cosmetic, as unfortunately was used at Merion for the 1966 Amateur on Nos. 15 and 17, leaving no contact between the ball and the ground; and having the greens best for each championship, rather than saving them for another one, such as was done at Carnoustie for the 1966 British Amateur in anticipation of the 1968 British Open.

Finally, the guiding principle of what the player expects in greens is that, as much as possible, luck should be taken out of the greens so that the best player will have the best chance of winning. There is a line to be drawn between the difficult and challenging on the one hand, and the too difficult and unfair on the other.

Putting Green Design — Please Golfers, Ease Maintenance

by MARVIN H. FERGUSON, Mid-Continent Director, USGA Green Section

The first requirement of a putting green is that it provide good playing values to please the golfer and to test his skill. A putting green also should lend itself to economical maintenance. Contrary to the beliefs of some, there is no conflict between these requirements.

A plea for design which will permit economical maintenance frequently encounters the argument,

"You are asking us to sacrifice golf values for the sake of easy maintenance."

Conversely, an insistence upon good and interesting design from the player's viewpoint is challenged by an allegation that such a green will be costly to maintain. These arguments lack validity in most cases. Let us examine some of the major considerations in putting green design.

Size

The golfer prefers a green large enough to provide a variety of hole locations, but he objects to a green so large that it places too

great emphasis on the putting. He likes a green, or at least a target area, to be relatively small if the approach is a short one, and he prefers larger targets as the length of approach shot increases.

Now what does the golf course superintendent want? He wants plenty of cup space so that turf will have time to recover from the traffic in one location before it is used again. This rules out very small greens. If the approach is a short one and calls for a small target, the superintendent prefers that the green be larger with well defined and separated hole locations. On the other hand he knows that every maintenance operation is related to size of the putting surface, and that very large greens are expensive.

It appears then, that both the golfer and the superintendent prefer greens of moderate size, big enough to provide for variety and traffic rotation, but not so large as to overemphasize