

THE GOLF COURSE

A MONTHLY BULLETIN DEVOTED TO THE DISCUSSION OF MODERN METHODS AS APPLIED TO GOLF COURSE CONSTRUCTION AND UPKEEP

Golf Architecture

By A GOLFER

THE flood-tide of golf which has swept over the country during the past four or five years has brought with it a higher standard of play. It has also brought the demand for courses of a testing character and of a more artistic standard than those in the past.

The day of the dreary, straight bunker in front of the tee, and its equally dreary brother short of the green, which in the old days satisfied the longings of the new golfing convert, is now a thing of the past, and you have only to visit a newly-designed course to realize the enormous strides which have taken place in the refinement and beauty of golf architecture.

Thus it comes to pass that the Green Committees which have inherited the uncomely design of the nineties are anxiously striving after higher standards, and those which have charge of the newer courses are endeavoring to improve them all the time. Some succeed and others fail. It is purely a matter of the skill of the golf architect and of the person who carries out his designs.

There are, unfortunately, persons who do not yet realize that the laying out of a golf course requires a much higher degree of artistic ability than the designing of a clubhouse, and thus clubs will spend their thousands to make beautiful the place where they eat and keep their clubs and will grudge a few hundred dollars for skilled advice in the beautifying of the course, upon which, after all, the success of the club must depend. If there is to be any question as to the allocation of available funds, the perfection of the course should surely be the primary consideration. Which counts first with a golfer (I mean, of course, a *real* golfer), an elaborate clubhouse or an up-to-date, artistic golf course, and which will determine his choice of the club he will join and support?

Assuming that we are agreed upon this point, we may go a step further and inquire into the principles which should guide a committee in the laying out or modification of its course.

First, it is only a high-class architect

(Continued on Page 130)

The GOLF COURSE

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R. O. SINCLAIRE, Editor

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Good Indian's Prayer

OH powers that be, make me sufficient to my own occasions. Teach me to know and to observe the Rules of the Game. Give to me to mind my own business at all times and to lose no good opportunity of holding my tongue. Help me not to cry for the moon or over spilled milk. Grant me neither to proffer nor to welcome cheap praise; to distinguish sharply between sentiment and sentimentality, cleaving to one and despising the other. When it is appointed for me to suffer, let me, so far as may humanly be possible, take example from the dear, well-bred beasts, and go away quietly, to bear my sufferings by myself. Give to me to be always a good comrade, and to view the passing show with an eye constantly growing keener, a charity broadening and deepening day by day. Help me to win, if win I may; but—and this, Oh Powers! especially—if I may not win, make me a good loser, Amen.

—By an Unknown Author.

THE present issue completes the first year of the existence of "The Golf Course." Originally planned and published somewhat as an experiment, the enthusiastic expressions of approval and commendation which are daily received have proved that it has filled a long felt want.

In covering a field which had hitherto been neglected, "The Golf Course" has been privileged to bring out articles on timely subjects by many of those who are admittedly the master craftsmen of golf course construction and maintenance. It has rejected large numbers of excellent articles treating on subjects pertaining to the game itself, and has carefully avoided entering the field of the popular golfing papers.

For the coming year "The Golf Course" will pursue the same policy. Its object is to bring to the attention of those in charge of American golf courses new and useful ideas obtained from the best courses in the world—the ideas, methods, and materials used by the masters. If the attainment of this end results in better turf, better courses, and better golf, the publishers will feel that their purpose has been accomplished.

We have received a number of requests for bound copies of "The Golf Course" for the year 1916, and as a consequence have made arrangements to furnish a copy to anyone desiring it.

We have selected a handsome binding of Black Morocco leather back and corners with dark green cloth sides. The cover will be appropriately stamped in gold.

We find that we are short the January and February numbers and will have to ask those who wish copies of this book to supply us with these two numbers.

The cost per volume, including postage, will be \$3.00.

Aside from being very useful, this volume will make a most attractive addition to your library.

The Cost of Golf Course Construction

III

THE cost of installing a suitable drainage system is of course greatly dependent on the cost of digging the ditches. However, in some cases it will also be advisable to change the course of creeks and watercourses, straightening them or making new channels, etc., and frequently it will be found that this will save considerable time and trouble and will be comparatively inexpensive. Care must be exercised to do the work in such a way that a natural result will be obtained, as otherwise the beauty of the golf course will be marred by an unattractive spot.

It will often be best to divert the water from crossing some of the greens or fairways and by judicious grading and filling considerable tile drains may be avoided.

The cost of digging, laying the pipe, and filling will vary with the depth at which the tile is to be laid, and also with the size of the tile. For 3" tile, laid 2 ft. deep, the cost will run from 2c. to 3c. per lineal foot. The larger sizes of tile must be put down deeper, but the cost of an 8" drain should not be more than 3c. to 4c. a foot, unless it is necessary to dig a very deep trench. In some it may be possible to secure a trench digging machine from a nearby city or town. These machines, even when not very efficiently operated, will give considerably lower figures than the above. The trenching required for golf course drainage is comparatively easy and the cost will not run nearly as high as in city work. In average soil a man should be able to dig from 100 to 125 feet of 18" to 24" deep trench per day; if the work is efficiently

done this figure might be raised still higher. Taking the lower figure, we get a cost of 2c. a foot, labor being figured at \$2.00 a day. Proper allowance can easily be made for other rates of pay and for more difficult soils. The cost of the foremen will run anywhere from \$2.50 to \$3.50 a day but will not make a marked difference in the cost of this class of work.

The amount of ditching which will be necessary is of course variable and depends on the local conditions and the extent to which it is desired to drain the course. As mentioned before, much money will be saved to a club if the drainage is carried out on a very elaborate scale when the course is being built, rather than to wait until some future time when an unusually heavy storm does hundreds or thousands of dollars damage. Thorough drainage will prevent much of the loss of expensive seed and fertilizer, which is apt to occur when the course is new. During the past summer alone, several new courses were forced to spend large sums of money to reseed and fertilize greens which had been washed out by a sudden thunderstorm. We have in mind a course in the East where several greens were ruined simply because water flowed over them during a heavy rain, and in this particular case at least it would not have cost \$25 to divert the water into other directions. Since the seed and humus alone for these greens averaged, without considering the expense of application at all, about \$112, the club lost about \$90 apiece, plus the cost of a large amount of labor.

At the Scioto Country Club, whose

very complete and instructive report we have had the pleasure of quoting several times, the drainage system cost approximately \$9400. This figure, as has been explained before, is much larger than was anticipated at first, owing to the improvements and extensions of the system which were rendered necessary by the unusual weather conditions during the season of construction. It is very probable that sums approximating this could be spent on a great many golf courses if insurance against interruptions in the play and damage to the course is desired. The putting greens, pits and grass hollows required about $2\frac{1}{2}$ miles of 3" and 4" tile. The drain lines varied from 3" up to 8", with a few feet of 10" line. A storm sewer was constructed to take care of exceptional conditions, and for this part of the work it was found necessary to build 1100 ft. of 24" line. The total amount of tile drain laid was about 45,000 ft., or $8\frac{1}{2}$ miles. Since the total drainage expense as given above includes changing the course of a creek as well as preventing the flow of water over several of the greens by means of suitable grading, it will be seen that the cost of laying the tile itself was very low indeed.

IV

THE WATERING SYSTEM

The average course is sadly deficient in proper watering facilities. We have known a few that had none at all, to the detriment of the greens. The best course to pursue in installing a watering system is to have it designed by a competent engineering firm which specializes in this sort of work. As a rule these firms will submit complete designs and also estimates or bids for the construction work. Except in rare cases it

will be more satisfactory to turn the entire work over to these contractors, and in any case no attempt should be made to make the plans. Considerable experience is necessary to design suitable watering systems and it will be cheaper to let an expert do the work.

The question of how much watering facilities will have to be supplied will have to be decided after due consideration of local conditions. The very minimum will be water at each green, but if the fairways are not to be neglected, provision should be made for watering them from end to end. An outlet should also be installed at each tee. In most cases financial considerations will determine how extensive a system can be installed, but if the course is to be kept in prime condition the matter cannot be skimmed too much.

For an ordinary golf course, it will be necessary to lay from one to four miles of pipe of various sizes. It is not possible to give the exact cost of a system owing to the present disturbance in the price of piping. By ascertaining the market prices of the various sizes to be used it is not hard to figure this item. The cost of excavating, laying, caulking and backfilling will run from 10c. to 15c. or 16c. a foot, and the total cost per foot of pipe line will be from 50c. to \$1.50 per foot. This last figure will vary principally with the source of the water which is to be used. If an adequate quantity of water can be secured with little or no machinery necessary, the cost will be very low, whereas if an elaborate pumping plant, well, etc., is required, the cost may even exceed the figure last given. Probably for most cases, \$1.00 a foot will cover everything, including superintendence, etc.

(To be continued)

Snow

IT may be a hard winter, but it is an established fact that soil conditions in the Spring would be a great deal worse were it not for snow. Nature invariably provides a means to neutralize the ravages of climate. Snow is the friend of the Green Committee, even though its beneficial results may not be noted until it has passed.

Snow is a poor conductor of heat. Rain is three times more effective. As a consequence, during the winter, snow upon the grass keeps in the natural warmth of the earth and excludes much of the intense cold. It has also some fertilizing value. Agricultural experts agree that land under cultivation suffers through lack of proper enrichment when a winter passes with the snowfall below normal.

Growing things—particularly grasses—can stand a much greater drop in temperature if protected by snow. An open winter, with low temperatures alternating with rains instead of snow, complicates the problem of the Green Committee in the Spring. Rain enriches the soil by bringing to the ground azote in the form of ammonia or nitric acid, but snow is an even more powerful fertilizing agent because the fertilizing material contained in the water of an inch of melting snow is of much greater value than that found in a like quantity of rain water.

Snow has so many admirable features that lack of space forbids a consideration of all of them. The main point to be emphasized here is its value as a neutralizer of temperature. Combined with these qualities is its fertilizing qualities, which cannot be denied. The poet who first referred to snow as a

"blanket" uttered a truth which he could not appreciate unless he were also a greenkeeper.

Wherefore, golfers, do not wring your hands and curse the blanket on the earth. The more that you are deprived of your game by snow, the more you will appreciate its benefits with the return of Spring.

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Detroit	New Britain
Minneapolis	Baltimore
New York	Boston
	Asheville

and Many Other Places in America

Golf Architecture

(Continued from Page 125)

who can design a high-class course. He may be known or unknown, an amateur or a professional, a scratch player or a 20-handicap man, but he must be gifted with imagination and have studied and practiced his subject, just as an artist or a church architect has done. His object must be to make every hole a complete picture, full of individuality and character and yet quite unlike every other hole on the course. It is the same with the greens and the bunkers. Each one shall be a separate study and each one should fit naturally into its environment. It by no means follows that the scratch men of a club or the best golf professionals in the country are the persons to consult in such matters. It requires something more than a good stonemason to design a church.

What is a good golf hole? The primary consideration is that it should require the accurate placing of every shot; it should have character and individuality, and the green and its environment should be as artistic as possible; it should test the skill of the expert, and yet present no unfair shots for the duffer.

The up-to-date standard championship golf course to-day has at least three and usually four "one-shot" holes of varying lengths, from 130 to 230 yards; six to eight "two-shot" holes from about 380 to 430 yards; two long holes from 510 to 550 yards; one to three holes from 430 to 460 yards, depending on the nature of the soil sometimes, and three or four "drive and difficult pitch shot" holes from 300 to 360 yards. It is always important to

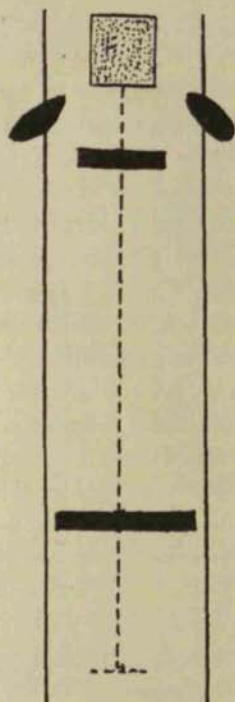


FIGURE 1
Length of hole, 270 yards

start off on a course with two or three good long holes, say 430 yards, 450 yards and 360 yards, before arranging a short hole that would cause any congestion of play at the start.

The finish in the last three or four holes should always be the hardest test of the game on the course, ending up with a very fine "two-shot" hole to the clubhouse.

A course can be correctly laid out as far as the distances and arrangement of the holes are concerned, but to create a first-class finished proposition of championship quality, it requires much personal supervision of the construction work by the architect and the services of a competent and experienced foreman.

The moulding out of a course after it has been laid out to the best advan-

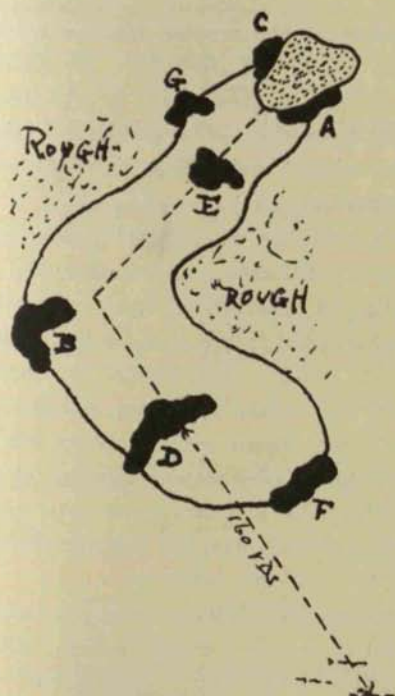


FIGURE 2

Same hole as figure 1, lengthened to 330 yards

tage is, in a way, the most important part of all.

The Improvement of Old Courses

Owing to introduction of the rubber-cored balls, it has been necessary to lengthen out most all of the courses of the old design. It is not, however, simply a question of added distance that makes a change necessary, but a general rearrangement of all the tees, bunkers, traps, etc., as well as the reconstruction of many of the putting greens.

What were formerly "two-shot" holes are now "drive and pitch" holes. The bunkers for the short driver have ceased to be bunkers at all and those for the long driver have lost all their terrors. Further than this, the principle in bunkering the approach to a long hole is totally different from that of the

"drive and pitch" variety, while the green is larger, so that the good "two-shot" hole has now become a bad "drive and pitch" hole. These difficulties can often be overcome quite well without a reconstruction of the course.

It is astonishing how many holes can be lengthened by placing the tees back and then constructing two or three tees at every hole, using the back ones during dry weather and the front ones in the early and late seasons.

Another method is to make the holes into the dog-leg variety (or to place the tees on the extreme side of the course) and introduce bunkers which will compel the player to place his ball on the far side of the fairway and the second shot diagonally up to the green, as shown in Sketch 2.

Either process results in the lengthening of a hole, such as in Sketch 1, which is a fair example of hundreds of holes found on the older courses in this country, ranging from 290 to 350 yards.

Two parallel holes may be lengthened by poaching upon each other (see Sketch 3). The greens must be constructed and bunkered to compel diagonal play and the fairways cut in irregular lines. The ground between the two courses should in such cases be kept as rough as possible, and one or two groups of mounds in between help to disguise the scheme and make it look natural.

Where none of these means exist for lengthening the hole, and the course cannot readily be reconstructed, the only thing is to take "the bull by the horns" and reduce the size of the green, perhaps, bunker it well and make it a genuine "drive and pitch" hole. A big hollow at the approach of the green,

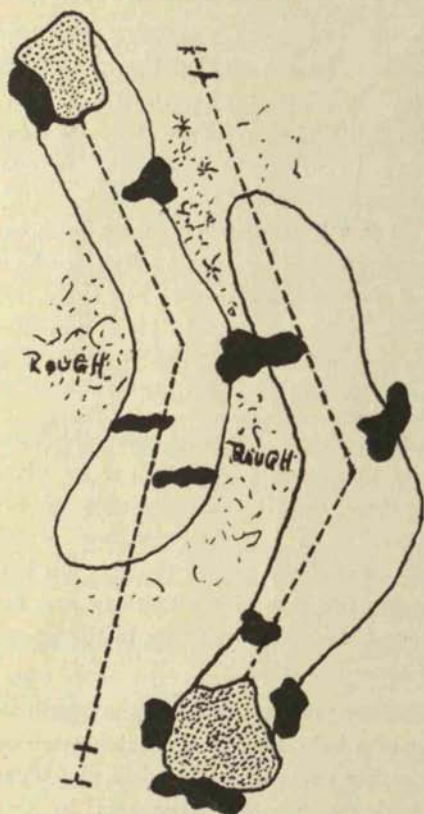


FIGURE 3

Formerly two parallel straight holes, about 30 yards in length added to each

with soil thrown up to make it a plateau green, demands a rather more delicate shot and gives character to the hole. In this case, the green should be bunkered at the back to punish the over-played shot.

The scheme of bunkering should really start at the green and work backwards, and seeing that the standard of a course must ultimately depend upon how far it is a test of good golf, the holes should be built for the scratch player.

A course with interminable bunkers at 100 to 120 yards from the tee may be a very good test for the 20-handicap player, but those bunkers are non-

existent to the scratch man or to the long driver, and, therefore, are devoid of interest to him. He wants something to go for, or to avoid, and every drive should be a test shot of some description.

On the other hand, the big handicap man is entitled to consideration, and in laying out a "two-shot" hole, say of 380 to 430 yards, it is better for the second shot to avoid a cross bunker, which the short player has no chance of carrying and which leaves him no option but to deliberately play short. He can get up with a drive and two irons, it is true, and do an easy five, but this affords him not the slightest pleasure.

Sometimes, if there is a reasonable opening between traps, he can, after a fairly long drive, get "home" in two. He will get caught in a good many cases, but the shot that comes off affords him infinite pleasure, and he is playing golf all the time.

In Sketch 2 the bunkers are lettered, and starting at the green we mark out bunker A. The mere existence of this bunker alters the entire character of the hole. The green can now only be approached from the left, and this necessitates the accurate "placing" of the drive if you want to get "home" in two shots. We then add bunker B, to punish a "hooked" drive from the tee. These two bunkers alone make it a testing hole. We go on building it up by placing C to make it difficult to stay on the green from the right, D to carry from the tee at 160 yards, E if you like a trap to carry on the second shot. All that remains to satisfy the short player is F, and then G can be placed to catch his badly-placed second shot.

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INDEX

	PAGE
A-Dreaming (poem)	71
Architecture, Golf	125
Bulbs, Spring Blooming, as Clubhouse Decorations.....	91
Charcoal	82
Construction, Cost of Golf Course	107, 113, 127
" of Putting Greens in Hot Clay Soil District..	115
" Science of Golf Course	67
Cost of Construction and Maintenance of Good Golf Course	12
" " Golf Course Construction.....	107, 113, 127
Courses, Private	14
" Public	37
" Resort	40
Crab Grass	82
Critics and Cranks, Golf Architecture, Golf Course.....	3
Danger of Opening Putting Greens in March.....	24
Distances, Sane	40
Divot Marks	61
Drainage, Putting Green	72
Editorials.....	2, 10, 22, 34, 46, 66, 78, 90, 102, 114, 126
Fairways, Speeding Up Slow	79
Fertilization, Notes on Proper	38
Golf Architecture	125
" " Golf Course Critics and Cranks.....	3
Grass Diseases and Parasites.....	89, 108, 120
Greenkeeping Notes.....	5, 17, 27, 39, 57, 81, 93, 95, 98, 104
Holes, Long	36
" Two Interesting	80
Humus Deposits, Local, and How to Use Them.....	60
Importance of Good Seed	36
Indian's Prayer, Good	126
Leaf Mould	103
Peter Lees	17
Lido Links, The	58
Lime, Use of	116
Long Holes	36
Merion, Quarry Holes at	94
Model Golf Course, Making of.....	47
Modern Golf Chats	1, 9, 23, 33, 45, 53, 65
Overwatering of Putting Greens and its Results.....	11

INDEX

	PAGE
Park, Willie	50
Poa Annua in Putting Greens.....	69
Private Courses	14
Public Courses	37
Punker's Lament, The (poem).....	5
Putting Greens, Condition at End of Summer.....	83
" " Construction in Hot Clay Soil District.....	115
" " Covering for Winter	107
" " Danger of Opening in March.....	24
" " Drainage	72
" " Overwatering of	11
" " Poa Annua in	69
" " Weeds in	35
" " Winter-kill of	3
" " Worms in	105
Quarry Holes at Merion	94
Real Estate, Relation of Golf and.....	15
Renovation, Autumn	70
" Spring	24
Resignation (poem)	14
Resort Courses	40
Rolling	41
Sand	82
Seed, Importance of Good	36
September Grass	82
Snow	129
Soils	101
" Causes and Treatment of Sour.....	49
Sourness in Soils	49
Sowing, Autumn	70
Speeding-up Slow Fairways	79
Speeding Golf Turf Production	21
Spring Renovation Work	24
Teeing Grounds, Generous	37
Turf and Golfing Turf	77, 96
" Production, Speeding	21
" Transplanting	55
Weeds in Putting Greens	35
Winter-kill of Putting Greens	3



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