



USGA JOURNAL

AND
TURF MANAGEMENT

LIKE ANY OTHER GOLFER



Wide World Photo

Ed Furgol reveals his emotions after receiving his prize. If Furgol's emotions seem intensified, it is because this prize represents the Open Championship.

JULY 1954



USGA JOURNAL

AND
TURF MANAGEMENT

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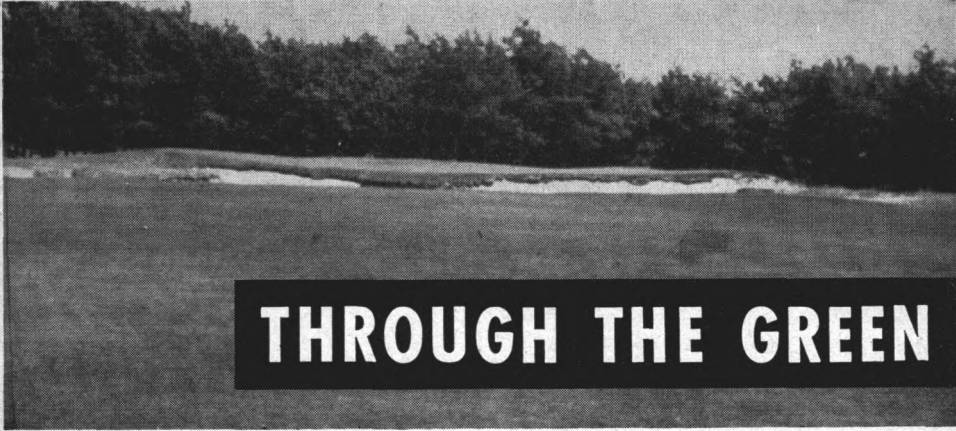
USGA COMPETITIONS FOR 1954

Americas Cup Match—August 12 and 13 at the London Hunt and Country Club, London, Ontario, Canada. Men's Amateur Teams: Canada vs. Mexico vs. United States.

Curtis Cup Match—September 2 and 3 at the Merion Golf Club, Ardmore, Pa. Women's Amateur Teams: British Isles vs. United States.

(Dates entries close mean last dates for applications to reach USGA office, except in the case of the Amateur Public Links Championship. For possible exceptions in dates of Sectional Qualifying Rounds, see entry forms.)

Championship	Entries Close	Sectional Qualifying Rounds	Championship Dates	Venue
Amateur Public Links	Closed	Held	Team: July 10 Indiv: July 12-17	Cedar Crest G. C. Dallas, Texas
Junior Amateur	July 6	July 20	August 4-7	The Los Angeles C. C. Los Angeles, Cal.
Amateur	July 12	July 27	August 23-28	C. C. of Detroit Grosse Pointe Farms, Mich.
Girls' Junior	August 16	none	Aug. 30-Sept. 3	Gulph Mills G. C. Bridgeport, Pa.
Women's Amateur	August 30	none	Sept. 13-18	Allegheny C. C. Sewickley, Pa.



THROUGH THE GREEN

We're Sorry, Too

We can find no explanation, other than the obvious one, for the following letter which we received just before the Open Championship:

"I wish to let you know that I am very sorry in turning down your invitation to compete in the USGA Open at Baltusrol this year. I feel the course and competition are below the necessary standards to warrant my appearance.

"I am certain you will understand my position.

"I thank you for your invitation. Perhaps next year, with stiffer competition, I may be coaxed to enter. Please extend my sympathies to the heart-broken galleries who will be unable to view my spectacular performance until some later date.

"Sorry folks.

CARL DURBAN
SCARBORO JUNCTION
ONTARIO, CANADA"

Handicaps for Championships

While the USGA has long maintained a handicap qualification as a basis for eligibility of amateurs who wish to compete in the Open and Amateur Championships, it has never defined the method by which these handicaps should be computed. Any bona fide handicap has been acceptable.

Effective in 1955, however, handicaps

for this purpose must have been established in accordance with the recommendations of the USGA Handicap Committee as set forth in USGA Golf Handicap System for Men. Either basic or current handicaps will be acceptable.

Variety of Service

There was a question in the locker room the other day as to which clubs have entertained the widest variety of USGA competitions.

Three share the lead in this respect: the Chicago Golf Club, in Wheaton, Ill., The Country Club, in Brookline, Mass., and, as of next September, the Merion Golf Club, in Ardmore, Pa.

Merion, which will have held ten USGA competitions at the end of this season, will have entertained all three of the oldest Championships, the Open, Amateur and Women's Amateur, and the forthcoming Curtis Cup Match. Chicago Golf Club, which has held a total of nine, and The Country Club, which has had a total of seven, have entertained all three of the oldest and a Walker Cup Match.

Five other Clubs have held each of the three oldest Championships at least once. They are: Baltusrol Golf Club, Springfield, N.J., Brae Burn Country Club, West Newton, Mass., Onwentsia Club, Lake Forest, Ill., St. Louis Country Club, Clayton, Mo., and Shinnecock Hills Golf Club, Southampton, N.Y.

Wanted: Candidates

As has been announced, the Association is to present an annual award to an individual for distinguished sportsmanship in golf. It is to be known as the Bob Jones Award, to commemorate the vast contributions to the cause of fair play made by Robert Tyre Jones, Jr.

The award need not be based on sportsmanship for only the current year; rather it might well be presented for sportsmanship over a period of years or for a significant act some time ago. The first winner is to be announced at the 1955 Annual Meeting next January.

The Committee charged with nominating an individual to receive the award invites suggestions for consideration. If you wish to suggest an individual, please send us a full recital of supporting facts.

30 Years in the Right Job

In 1924 Eugene L. Larkin became Green Committee Chairman of the Westchester County Golf Association, in Metropolitan New York.

In 1954, thirty years later, he still holds that office.

Are there records of any longer service on a green committee?

Thumbs Down on Pools

When the 31st annual invitation tournament was played this spring at the Shawnee Country Club, Shawnee-on-Delaware, Pa., Stephen Berrien as Tournament Chairman publicly reaffirmed the Club's position prohibiting Calcutta pools or any other organized gambling on all tournaments.

Mr. Berrien is President of the Metropolitan Golf Association in New York.

Two More for the Team

The Ladies' Golf Union has selected two more players for the Curtis Cup Team which will defend the trophy at the Merion Golf Club, Ardmore, Pa., in September:

Miss Elizabeth Price, of Surrey, England, and Mrs. R. T. Peel.

Miss Price won the final and conclusive point in the Britons' 5 to 4 victory of 1952. She also was a member of the 1950 Team which played here.

Previously, the LGU had named Mrs. John Beck as Captain and Miss Jeanne Bisgood, Miss Philomena Garvey and Mrs. George Valentine as players.

What the Public Links Means

Golf and all that it can mean to the average man from the hobby aspect is at its very best as golfers compete in the Amateur Public Links Championship.

If you could stand unobtrusively near the first tee as the pairs march into battle in the 29th Championship at the Cedar Crest Golf Course, in Dallas, this month, you would sense that this is a tournament enjoyed to the hilt.

Quite naturally, you would get the feeling that you are mingling with a cross-section of the every-day, solid folks.

The modest fellow who works at the desk next to you, who delivers your milk or mail, who keeps your books, who toils in factory and office—all are there and somehow you would think you knew them well.

They are not highly publicized sports heroes, even though when they are at the peak of their games they would not look bad against golf's more famous amateurs.

Certainly, they are deadly serious. They range in age from youngsters with crew-cut hair to graying oldsters with the paunches of middle-age.

You would easily see that they want to win. But the gratifying point is that these men don't have to win. It is for fun. Golf is their hobby, an avocation rather than a vocation.

When the week is over, all will return

Treat your caddie as you would your son.

to their jobs and their lives will be the same.

Those who win will receive the cheers that go to a Champion and the losers will get sympathetic condolences. But the top man will not come out of this with the fanfare that has greeted, say, Ben Hogan through the years, and he does not expect it.

Many have to watch their dimes and dollars, and often playing has meant a sacrifice, although it is true that some are helped to a limited extent by public links associations in their home areas under an exception to the Rules of Amateur Status.

An Australian Victory

The British Amateur Championship has left the United Kingdom for the sixth time in nine years, this year to repose in Australia.

Doug Bachli, the 1948 Australian Amateur Champion, took it there by defeating William C. Campbell, of Huntington, W. Va., 2 and 1, in an international final at the Muirfield links in Scotland. Bachli is the first Australian to win the title, if one excepts the late great Walter J. Travis, who was born in Australia but learned his golf here and represented this country when he won in 1904.

The Bachli-Campbell final was quite naturally compared to a contest between David and Goliath or even one between Mutt and Jeff. While Bachli stands only 5 feet 5 inches, Campbell rises to 6 feet 4 inches. By either comparison, the little man, who had trailed by one hole after 18 and after 27, won three of the last four holes to score, 2 and 1.

In recompense, the British regained their Women's Championship when Miss Frances Stephens defeated Miss Elizabeth Price, 4 and 3, in the final at Ganton, England. Miss Marlene Stewart, the Canadian defender, lost to Miss Stephens on the fourth extra hole in the semi-finals after disposing of Miss Wiffi Smith, the lone United States entrant, in the third round.

SPORTSMAN'S CORNER



LLOYD MANGRUM

Scene: The eighteenth green at the Baltusrol Golf Club's Lower Course.

Time: 5:40 P.M. Saturday, June 19, 1954.

Gene Littler was preparing to putt from about eight feet, a putt which, if he could hole it, would give him 284 and put him into a tie with Ed Furgol for the Open Championship.

His playing companion, Lloyd Mangrum, had just holed out for 286. Mangrum knew that this remarkable young man had been playing professional golf for only five months and might be very nervous. More than that, Mangrum knew that Littler's putting might cost Mangrum dollars.

Littler, understandably, was nervous as he crouched, now behind his ball, then behind the hole, then walking around as if waiting for inspiration to guide him.

At this point Mangrum walked over to the younger man and whispered a few words of encouragement. As the ball traveled toward the hole, no one appeared to be rooting harder for it to drop than Lloyd Mangrum.

With Malice Aforethought

On the face of it there would seem to be nothing unusual about the recent victory of J. Ellis Knowles, of Rye, N. Y., in the United States Seniors' Golf Association Championship at the Apawamis Club, also in Rye. After all, Mr. Knowles has now won the tournament six times, and a case could be made for the fact that it is only unusual when someone else wins it.

However, Mr. Knowles, who swings about the heaviest driver in the game today, is 67 years old and thus was competing against men who were his juniors by up to twelve years. He won the first of his six championships in 1942.

Furthermore, he didn't win by any mundane performance. He knowingly and with malice aforethought holed a 30-foot wedge shot from a bunker guarding the last green to make a birdie 3 and tie Joseph M. Wells, of Newall, W. Va., at 148. Three weeks later he defeated Wells in a play-off, 74 to 76. Wells, incidentally, is 65 and had won in 1949.

The Boys

Oliver Wendell Holmes passed away in 1894 and presumably was not a member of any senior golfing group, but his poem captured the spirit of such groups better than any written since.

Has there any old fellow got mixed with
the boys?
If there has, take him out, without making
a noise.
Hang the Almanac's cheat and the Catalogue's
spite!
Old Time is a liar! We're twenty tonight!

We're twenty! We're twenty! Who says we
are more?
He's tipsy, young jackanapes! show him the
door!
"Gray temples at twenty?" Yes! white if we
please!
Where the snowflakes fall thickest, there's
nothing can freeze.

Was it snowing I spoke of? Excuse the mis-
take.
Look close, you will not see the sign of a
flake!
We want some new garlands for those we
have shed,
And these are white ones in place of the red.

We've a trick, we young fellows, you may have
been told,
Of talking (in public) as if we were old:
That boy we call "Doctor" and this we call
"Judge."
It's a neat little fiction, of course it's all fudge.

That fellow's the "Speaker," the one on the
right;
"Mr. Mayor," my young one, how are you
tonight?
That's our "Member of Congress," we say
when we chaff;
There's the "Reverend" What's his name?
Don't make me laugh.

That boy with the grave mathematical look
Made believe he had written a wonderful
book,
And the Royal Society thought it was true!
So they chose him right in; a good joke it
was, too!

There's a boy, we pretend, with a three-
decker brain,
That could harness a team with a logical
chain;
When he spoke for our manhood in syllabled
fire,
We called him the "Justice" but now he's
the "Squire."

And there's a nice youngster of excellent pith,
Fate tried to conceal him by naming him
Smith;
But he shouted a song for the brave and the
free,
Just read on his medal, "My country" "of
thee."

You hear that boy laughing? You think he's
all fun,
But the Angels laugh, too, at the good he
has done;
The children laugh loud as they troop to his
call,
And the poor man that knows him laughs
loudest of all!

Yes, we're boys, always playing with tongue
or with pen,
And I sometimes have asked, shall we ever
be men?
Shall we always be youthful and laughing
and gay,
Till the last dear companion drops smiling
away?

Then here's to our boyhood, its gold and its
gray!
The stars of its winter, the dews of its May!
And when we have done with our life-tasting
toys,
Dear Father, take care of thy children,
The Boys!

PUBLIC LINKSMAN TO OPEN CHAMPION

by

JOSEPH C. DEY, JR.

USGA

Executive Director

WHILE VISITING the Westwood Country Club in St. Louis last summer, we noticed a lesson in progress on the practice tee. The professional was a familiar figure, but to see him in a teaching role was new to us.

We had first known Ed Furgol in the late 1930s as a contestant in the Amateur Public Links Championship. Later, he had become a tournament professional touring the circuit. Now this next golfing incarnation was as a club pro.

So it seemed rather natural to say jokingly to him, "You're doing mighty well for a club pro" when he came out for the third round of the Open Championship last month at the Baltusrol Golf Club, Springfield, N. J. He was then tied with Ben Hogan for second place with a thirty-six-hole score of 141, two strokes behind the leader, Gene Littler.

"Club pro?" Ed said. "I'm a club pro AND a playing pro! I have an average of 71.5 strokes for more than a thousand rounds of golf on the circuit in the last ten years."

Now that Ed Furgol is the Open Champion, it is fascinating to think back over his story, his rise to the peak of his profession. There are perhaps as many ways of becoming a champion as there are champions, but in golf they all have one great quality in common—determination.

That had to be so in Ed Furgol's case, for when he was 12 years old he shattered his left elbow in a fall from playground crossbars, and it never set right, with the result that the arm is permanently crooked at the elbow, and rather withered.

In a game which stresses the straight left arm, 37-year-old Ed Furgol proved that it's still the hands which swing the

clubhead, and it's still the spirit which can overcome the flesh.

The medal which Ed won at Baltusrol was his third USGA medal. He won the two others in the 1940 Amateur Public Links Championship at Detroit when he was representing Utica, N. Y. He tied for the qualifying medal with a then-record 138 for 36 holes and played through four matches to the semi-finals, where he lost on the thirty-eighth hole to the eventual Champion, Robert Clark, of St. Paul.

Two years before that, Ed had finished second for the medal, behind Walter Burkemo. Many graduates of the Public Links Championship have gone on to greater glory in golf: Burkemo was PGA Champion in 1953; Furgol is now Open Champion.

Before Baltusrol, Ed Furgol (no relation to Marty) had thrice qualified for the final thirty-six holes in the Open, the last time being in 1948. His best previous effort was a tie for 12th in 1946, when he had 77-69-74-69—289.

The Final Hole Decides

The thin line between winning and losing was dramatically illustrated many times in the last round over Baltusrol's great Lower Course, especially on the last hole.

This eighteenth hole is 545 yards long. The drive is downhill, with a brook, rough and trees at the left and goodly rough and more trees on the right. It is a tight tee shot. The second shot swings uphill to the left, across the curling brook, but the green is within range of the second shot for a good many players.

Dick Mayer came to the final hole needing a par 5 for a seventy-two-hole score of 284. Instead, his drive found an unplayable lie under an evergreen, and Dick took 7.

Next, Ed Furgol drove in among the trees on the left, played a safety shot onto the nearby eighteenth fairway of Baltusrol's other, or Upper, course, and pitched his third to the front apron of the green. He chipped six feet past the hole.

Had Ed not holed that putt for a par 5, the story might have been different. For later Gene Littler hit his second shot toward the eighteenth green and had the misfortune to have his ball catch a bunker at the left. His explosion was excellent but left him eight feet short. Had he holed the putt he would have tied Furgol's 284.

There were many other ifs, but these three are enough to serve the point. If Mayer had taken a par 5 or if Furgol had missed his six-foot putt or if Littler had holed his eight-footer, there might be a different name on the trophy for 1954. Such are the charming and vexing vagaries of golf.

It was that kind of an Open. Like so many of its predecessors, it was often lost. But it was also won very affirmatively by Ed Furgol's four rounds of 71-70-71-72—284, four above par.

Here were the leaders at the various stages:

18 Holes		36 Holes	
*William J. Patton	69	Gene Littler	139
Ted Kroll	70	Ed Furgol	141
Bob Toski	70	Ben Hogan	141
Gene Littler	70	Lloyd Mangrum	143
Al Mengert	71	Dick Mayer	143
Ben Hogan	71	Cary Middlecoff	143
Ed Furgol	71	Al Mengert	143

54 Holes		72 Holes	
Ed Furgol	212	Ed Furgol	284
Dick Mayer	213	Gene Littler	285
Cary Middlecoff	215	Dick Mayer	286
Lloyd Mangrum	215	Lloyd Mangrum	286
Gene Littler	215	Bobby Locke	288
Al Mengert	216	Tommy Bolt	289
*William J. Patton	216	Ben Hogan	289
		Shelley Mayfield	289
		Freddie Haas	289
*—amateur		*William J. Patton	289

When it was over, three names at the very top were new to that rarefied atmosphere: Ed Furgol, aged 37; Gene Littler, 23; Dick Mayer, 29.

Littler, Patton and Hogan

It was Littler's first Open. He turned professional only last January. In finishing second, just one putt away, he confirmed the promise he has shown in recent years

and especially in his victory in the Amateur Championship last September.

Littler's rounds at Baltusrol were 70-69-76-70—285.

Another player who captivated the gallery was William J. Patton, amateur from Morganton, N. C. His 69 led the first round, and he was very much in it until late in the day Saturday. Finally he finished five strokes off Ed Furgol's pace. His 289 not only won the low amateur medal but tied him for sixth place.

Billy Joe has qualified for the last 36 holes in the last three Opens and is the only amateur to win gold medals for so doing.

The Saturday before the Championship, Ben Hogan reeled off a 64 at Baltusrol on National Golf Day. He seemed to be at the peak of his greatness as he made ready to try for his fifth Open Championship. Only Ben, Bob Jones and Willie Anderson have won the Open four times.

The little Texan was in the thick of it for two rounds, being two strokes away from Littler after 36 holes. But he struggled through a bad third round of 76 and could not make up the ground.

The respect which his fellow-professionals hold for little Ben was evidenced in a remark by Ed Furgol at the prize presentation. "I can hardly believe I've won the National Open," said Ed, "and I know Ben here could give me two strokes a side."

Hogan could readily win the Open again if time and circumstance blend. Whether he does or not, he has enriched golf not only as a champion player but as a person.

New System of Gallery Control

A new system of gallery control was one of the most significant features of the Open. Nearly ten miles of rope and 2,100 iron stakes, permanently rigged, were used to protect every hole from tee to green. Spectators were marshalled completely off playing areas into the rough on the sides of the course, except for a few temporary walkways across fairways to facilitate travel between certain holes.

This innovation was tested by the largest galleries of which we have record for the

Open. Late on the first day the crowd following Ben Hogan got out of hand on the eighteenth hole, but Baltusrol's marshals, headed by John C. Smaltz, had things completely under control thereafter.

The result was that more spectators saw more golf than ever before without having to run, the contestants had eminently fair and uniform playing conditions and were not bothered in getting through crowds and after the first day the pace of play was unusually good for the Open.

Golf is the only popular sport in which players and spectators practically commingle, and sometimes this can be a great nuisance to players. Claude Harmon sums it up this way:

"Under the old system of gallery control, in trying to get through the crowds you had to break your stride numbers of times, and that is annoying when you are concentrating. Besides, spectators frequently came up and recalled the time you played their course back in 1941.

"The new system at Baltusrol was a joy for the players, and I know all of us felt that way. We had the playing area to ourselves, and the course was not pock-marked by thousands of foot-prints.

"It was really a great pleasure to play under such conditions."

Somewhat similar opinions were expressed by many spectators, who found they did not have to romp for vantage points as in other days and yet could see much more play than ever before.

Although the Open is afflicted by slow play in a sort of creeping paralysis that seems to defy a cure, the roping system, which was devised mainly by Robert Trent Jones, golf course architect, helped to improve things a bit after the first day.

For the first 18 holes, the last group of three players took 4 hours 41 minutes; this was the day when there were flaws in the gallery control system. In the 1953 Open at Oakmont, with a slightly smaller field, the last group finished in 4 hours 24 minutes.

The second day, with the field still playing in threes, the last group took 4 hours 5 minutes. This compares with 4 hours 48 minutes at Oakmont last year.

On Saturday, when play was by couples, the last pair started the fourth round at 3:17 P.M. and finished at 6:50 P.M.—an elapsed time of 3 hours 23 minutes, compared with 3 hours 26 minutes at Oakmont.

Every Club in the Bag

This was the ninth USGA Championship at hospitable Baltusrol, and the Lower Course never presented a sterner or fairer test. It was in glorious condition, thanks largely to Edward J. Casey, golf course superintendent, and his grand staff. Cary Middlecoff and Lloyd Mangrum, former Open Champions, were among many who volunteered that it was the finest course on which they had played in the Open.

The course stretched 7,027 yards, with a par of 70. There were several 69s and one 67, this lowest round being made by Richard D. Chapman, the amateur, with benefit of a hole-in-one.

Most players were called upon to use every club in the bag. Under normal conditions, the average contestant had to play long irons and woods—from a No. 3 iron up—six or eight times for approach shots in the course of a round.

The Two 18th Holes

After Ed Furgol played safely up the eighteenth fairway of the adjoining Upper Course in the last round, some persons wondered why the Upper Course was not out of bounds for the Championship.

Definition 21 in the Rules of Golf provides: "'Out of bounds' is ground on which play is prohibited." This leaves it up to the committee in charge of a tournament.

Where feasible, it is the USGA's general policy to recognize each club's natural and customary boundaries and to avoid creating artificial boundaries within club property. Occasionally it is advisable to have boundaries inside the property, as when a parking space or the clubhouse are so close to a line of play that things would be complicated if a ball were to fetch up among parked automobiles, or were to hole out in a soup tureen in the club dining room. But interior boundaries by themselves are

generally inadvisable. The idea is to permit play where golf can reasonably be played, to keep the ball in play, and not to force a player into the heavy penalty of stroke and distance on an artificial boundary.

USGA representatives inspected Baltusrol well in advance of the tournament, and as a result the boundaries were described on the USGA's official score card as follows (every player was given a copy before the tournament):

"Boundaries are defined by the inside line of the fence or a downward extension of the fence, at ground level."

The fence in question is Baltusrol's property line.

This is nothing new at Baltusrol. It is the custom there for the eighteenth hole of each course to be in bounds for the eighteenth hole of the other course, and the USGA has agreed with that custom for previous Championships there.

As a matter of fact, it is practically impossible to separate Baltusrol's two 18th holes by a boundary. As you approach the greens, there are a couple of bunkers between them which are common hazards for both holes. Gene Littler was in one such bunker on his last round. Have you ever seen a line of out-of-bounds stakes drawn through the middle of a bunker?

Pairings for Final 36 Holes

Rule 36-2a of the Rules of Golf provides:

"The Committee shall arrange the order and times of starting, which, when possible, shall be decided by lot."

Pursuant to this, pairings and starting times for the last 36 holes were arranged as follows:

1. The leaders after the first 36 holes (14 persons) were paired with one another by lot.

2. These leading couples were drawn by lot for starting times which were spaced well apart.

3. The remainder of the field was drawn by lot for the remaining starting times.

This is substantially the method which the USGA has long used for the final day of the Open and conforms with a long-standing Rule of Golf.

This was the last Open in which all former Champions were eligible for exemption from Sectional Qualifying Rounds. The premium on qualifiers' places has become so high (about 15 players for each place) that, effective in 1955, exemptions of former Champions will be limited to the last five *individuals* who have won the Championship.

Records

This 54th Open Championship was a record-breaker in several ways. First, there were 1,928 entries after all withdrawals, compared with the former record of 1,688 in 1952, an increase of 240.

The prize money, originally fixed at approximately \$20,000, was increased several days before play began by a 20 per cent bonus for each prize, for 1954 only. The total actually awarded was \$23,280, a new USGA record, with the winner receiving \$6,000, of which he gave his caddie \$1,050.

It was the first Open to be televised nationally, NBC doing a two-hour telecast on the last day.

The estimated attendance each day was the highest on record, the paid and complimentary admissions being approximately:

First day	12,500
Second day	13,400
Third day	13,700

Total 39,600

Above all else, the atmosphere was about as happy as is possible. For this, we have to thank a great many Baltusrol members and especially C. P. Burgess, the General Chairman. Baltusrol knows and appreciates golf, and did a superlative job in entertaining this 54th Open.

And now we have as Champion a courageous man who has come a long way since those early days of the Amateur Public Links Championship, a man who has overcome many adversities and who apparently realizes not only the privileges but also the responsibilities of his new position. American sports can ennoble many men, and many men have ennobled our sports. When he accepted his prize, Ed Furgol said:

"I only hope I can give something back to golf."

THE AMERICAS CUP TEAM

IF YOU enjoy spending your idle hours in agony, you might find the process of selecting your own personal Americas Cup Team a pleasant one. The USGA Executive Committee prefers less painful means of employing its time, however, and so it confesses to considerable difficulty in selecting the seven amateurs who will attempt to defend The Americas Cup against Canada and Mexico at the London Hunt and Country Club, London, Ontario, next month.

There is no question in its mind but what the Team it came up with meets the qualifications and will give an excellent account of itself. It does not gainsay, either, that there is in this country a multitude of fine young men with golfing talent which makes the selection of international teams increasingly difficult.

The 1954 Americas Cup Team will consist of Jack Westland, of Everett, Wash., non-playing Captain, and the following seven players:

WILLIAM C. CAMPBELL, Huntington, W. Va.

DON CHERRY, New York, N. Y.

CHARLES R. COE, Oklahoma City, Okla.

JOSEPH W. CONRAD, San Antonio, Texas

DALE MOREY, Indianapolis, Ind.

WILLIAM J. PATTON, Morganton, N. C.

E. HARVIE WARD, JR., San Francisco, Cal.

Three of these, Campbell, Coe and Ward, are veterans of the first match for The Americas Cup, at the Seattle Golf Club two years ago, as well as of Walker Cup matches. Cherry was a member of the last Walker Cup Team. Conrad, Morey and Patton will be representing their country in international golf for the first time.

In the event that any of the players selected cannot play, an invitation will be issued to one of the following alternates in the order named:

RICHARD D. CHAPMAN, Pinehurst, N.C.

BRUCE CUDD, Portland, Ore.

KENNETH VENTURI, San Francisco, Cal.

This second match for The Americas

Cup will be held on Thursday and Friday, August 12 and 13. The first day will be devoted to three thirty-six-hole "sixsome" matches, in each of which each side will be represented by two players playing alternate strokes and competing simultaneously against the other two sides. The second day's program comprises six thirty-six-hole three-ball matches. Each match will be played to a conclusion, with extra holes if need be.

The Canadian Amateur Championship will follow The Americas Cup Match on the same course, starting the following Monday, August 16, and the USGA Amateur Championship will be held in the subsequent week at the Country Club of Detroit.

In the first match, the United States scored 12 points to 10 for Canada and 5 for Mexico. The Canadians recently had the benefit of competition in the inter-dominion matches held in connection with the two hundredth anniversary of the Royal and Ancient Golf Club at St. Andrews, Scotland, where they defeated Great Britain and New Zealand and lost to Australia and South Africa to place second behind Australia.

The well-established principles governed the selection of the United States Team:

1. Merit as a competitive golfer, based upon records in tournaments of importance in recent years.

2. Sportsmanship and general ability to represent the United States in international relations.

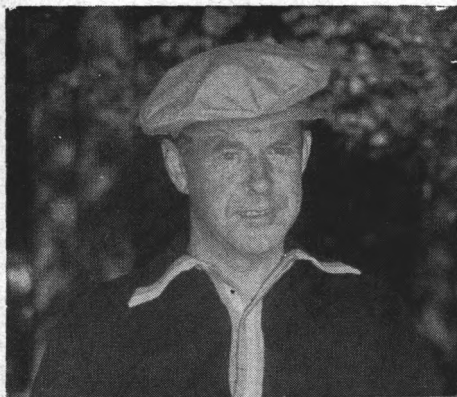
3. Unquestioned status as an amateur golfer.

Selection of Team members is not influenced by age, geography or any factors other than those named above.

In selecting this Team, the individual members of the Executive Committee nominated forty-two for consideration and actually rated and discussed twenty-six players.

Biographical sketches of the Team members follow:

Jack Westland



JACK WESTLAND

The non-playing Captain, Mr. Westland, gave all veterans new hope by winning the Amateur Championship in 1952 at the age of 47 and playing on the Walker Cup Team last year at the age of 48. He represents the Second Washington District in the House of Representatives of the United States Congress. His home is in Everett, Wash. He is married and has one son.

Mr. Westland's appearance with that Walker Cup Team was his third over a span of twenty-one years, since he had previously been a member of the 1932 and 1934 Teams. He was not associated with the last Americas Cup Team. Before Mr. Westland had graduated from the University of Washington, he won his state championship, in 1924. He was runner-up in the Intercollegiate Championship in 1925, French Amateur Champion in 1929, runner-up in the Amateur Championship in 1931 and Western Amateur Champion in 1933. He won the Pacific Northwest Amateur four times.

William C. Campbell

Mr. Campbell is a veteran of the 1952 Americas Cup Team and of two Walker Cup Teams. He was runner-up in the recent British Amateur Championship. A graduate of Princeton, he is 32, an insurance agent and broker in Huntington, W. Va., and a bachelor.

He went to the fifth round of the Amateur Championship in each of the last two years, to the fifth round of the British Amateur in 1953 and to the final of the Canadian Amateur in 1952. In 1949 he defeated Julius Boros in the quarter-finals of the Amateur but lost in the semi-finals.

In the 1952 Match, he competed only in singles and defeated Phil Farley, of Canada, 6 and 5, and Alejandro Cumming, of Mexico, 10 and 8.



WILLIAM C. CAMPBELL

Don Cherry

Mr. Cherry, the Canadian Amateur Champion, is a newcomer to The Americas Cup Team, although he was a member of the last Walker Cup Team. He is 29, a bachelor and a native of Wichita Falls, Texas. As a professional singer of popular songs, he cuts records and appears on radio and television networks and in theaters and night clubs throughout the country.

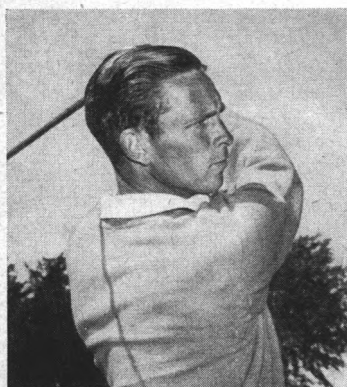
Last year, in addition to winning the Canadian Amateur, he was a semi-finalist in the Western and Southern Amateur

Championships. In 1952 he was a semi-finalist in the Amateur, runner-up in the Metropolitan (New York) Amateur and quarter-finalist in the Mexican Amateur.



DON CHERRY

Charles R. Coe



CHARLES R. COE

Mr. Coe was playing Captain of the last Americas Cup Team and has been a member of three Walker Cup Teams. He is 31, a graduate of the University of Oklahoma and resides in Oklahoma City. His business is oil investments. He is married and has three children.

Mr. Coe won the Amateur Championship in 1949 and was runner-up in the British

Amateur in 1951. He was Western Amateur Champion in 1950 and has won the Trans-Mississippi Amateur three times, the last in 1952.

In the 1952 Match, he defeated Reynaldo Avila, of Mexico, 9 and 8, and lost to Nick K. Weslock, of Canada, 3 and 2, in singles. He and Frank R. Stranahan lost to Weslock and Farley, of Canada, and to Percy Clifford and Roberto Morris, of Mexico, both by one hole, in foursomes.

Joseph W. Conrad

Mr. Conrad, the youngest member, is 24 years old and also new to international teams, but he has compiled an impressive record for his years. A 1952 graduate of North Texas State College and a member of three of its intercollegiate championship teams, he is at present a second lieutenant in the United States Air Force serving two years of active duty at the Lackland Air Force Base, in San Antonio, Texas, which is his home.

Recently he regained the Southern Amateur Championship which he first won last year along with the Trans-Mississippi Amateur Championship. He was the Mexican Amateur Champion in 1950 and the Texas Amateur Champion in 1951.



Wide World Photo

JOSEPH W. CONRAD

Dale Morey

Mr. Morey, who was runner-up in the Amateur Championship last season, also is representing the United States for the first time in international competition. His home is in Indianapolis, Ind., and he is a regional sales manager. He is 33 and was married last December.

Last year was a particularly fruitful one for Mr. Morey. He won seven tournaments, including the Indianapolis District, Indiana Amateur, Indiana Open and Western Amateur. In each of the previous two years, he went to the fourth round of the Amateur Championship. He was Southern Amateur Champion in 1950.



DALE MOREY *Wide World Photo*

William J. Patton

Mr. Patton captured the fancy of golfers everywhere when he played dramatically to within a stroke of tying Ben Hogan and Sam Snead in the Masters Tournament at Augusta, Ga., last spring, and he since has proved the performance was no fluke by winning the North and South Amateur and finishing first among the amateurs once again in the recent Open Championship, where he tied for sixth at 289.

This appearance will mark his debut as a member of an international team, although he was second alternate of the last Walker Cup Team. He was graduated from Wake Forest College in 1943 and is now 32 and a wholesaler of lumber in Morganton, N.C. He is married and has two children.



Wide World Photo

WILLIAM J. PATTON

E. Harvie Ward, Jr.

Mr. Ward is a veteran of the last Americas Cup and Walker Cup Teams. He won the British Amateur Championship in 1952 and was runner-up there last year. Although now an automobile salesman in San Francisco, he is a native of Tarboro, N. C., and a graduate of the University of North Carolina. He is 29 and married.

Last year, after going to the final of the British Amateur, he went to the fourth round of the USGA Amateur, to the third round of the French Amateur, tied for the amateur prize in the Masters Tournament and won the Georgia Amateur.



Wide World Photo

E. HARVIE WARD, JR.

JACK WHITE'S RECORD-BREAKING CLEEK

by

EDWARD S. KNAPP, JR.

USGA Executive Assistant

THE British Open Championship was instituted in 1860 and held annually until World War I, except in 1871, but it was not until 1904 that a competitor succeeded in breaking 300 for 72 holes.

In that year Jack White, the professional at the Sunningdale Golf Club, in England, not only scored 296 to win but also, by closing with a 69, became the first man to break 70 in the event.

"Golf House" is fortunate in having in its Museum several clubs made by Jack White, who was fully as well known as a club-maker as he was a player. And recently we received a club used by him in winning his Open Championship and setting the record.

Capt. A. Bullock-Webster, of Los Angeles, Cal., a member at Sunningdale when White was professional there, had been given by White the iron cleek which White used in the 1904 Open. Recently, the Captain made the acquaintance of Jimmy Thomson, of New York, who besides being famous as a mighty hitter of the golf ball is also a nephew of Jack White. The two men decided that the place for the famous cleek was the USGA Museum in "Golf House."

Photo of Score Cards

Accompanying the club was another gift from Bullock-Webster, a photograph of the four score cards turned in by White in making his historic score of 296. The scores, made at Royal St. George's, in Sandwich, England, are: 80 - 75 - 72 - 69.

An indication of the greatness of this performance can be gleaned from the fact that the next two British Opens to be played at Sandwich were won by Vardon in 1911 with 303 and by Hagen in 1922 with 300, scores which did not even approach White's 296.



JACK WHITE

Exactly twenty-five years later, while on a visit to this country, Jack White all but stole the show in the first round of the 1929 USGA Open Championship. At

he scored a 72, even par, at the Winged Foot Golf Club, Mamaroneck, N. Y. At that point he was fifth and, even though he weakened and was forced to withdraw in the second round, he proved beyond doubt that he retained all his old-time skill, but his heart was too big for his legs to carry around.

As this edition of the USGA JOURNAL went to press, 5,573 individuals, clubs, associations and other sources had enrolled as Founders by contributing \$102,565 to the "Golf House" Fund, and another \$7,500 is needed to complete the financing. The most recent Founders have been:

Mrs. Charles C. Barnes
Harry Gottlieb
Henry A. Johnson

PLAYING VALUES AT BALTUSROL

by
ROBERT TRENT JONES

*Past President,
American Society
of Golf Course
Architects*

DURING the last five years, the USGA Open Championship has been decided on four of America's most famous golf courses that may, in a sense, be compared to the English seaside courses which form that close-knit island's famous championship rota.

Starting in 1950, the Open has been played at Merion, Oakland Hills (1951), Oakmont (1953), and Baltusrol. Each of these courses has passed, or nearly passed, the half-century mark, totaling two hundred years of golf, all devoted to the game's finest traditions. These clubs' main interest is seeing that the game is kept at its highest level. The Northwood Club, in Dallas, Texas, which held the tournament in 1952, has the same interest, of course, but its course was built within the last decade.

In fifty years the game of golf has changed. It has changed most in two particular fields: first, in the equipment used, and second, in the conditioning of the courses. One has only to look at today's precision-made clubs, then contrast them with the crude, wood-shafted, handmade clubs of yesterday, to see what a marked contrast has come to pass, not in fifty, even, but in the last twenty years.

I well remember riding from Atlanta to Augusta with Bob Jones, not long ago, when we were taking the clubs with which he won the Grand Slam in 1930 for permanent residence in the Trophy Room of Augusta National Golf Club. Jones had gleaned, picked, and combed the golf shops of the world to collect a set of clubs which, to him, had the feel and balance of matched clubs. Yet these clubs, when compared with today's precision-made, matched sets,

A Game for All

Golf is a game for the many. It suits all sorts and conditions of men—the strong and the weak, the halt and the maimed, the octogenarian and the boy, the rich and the poor, the clergyman and the infidel . . . The later riser can play comfortably and be back for his rubber in the afternoon; the sanguine man can measure himself against those who will beat him; the half-crown seeker can find victims; the gambler can bet; the man of high principle, by playing for nothing, may enjoy himself and yet feel good. You can brag and lose matches; deprecate yourself and win them. Unlike the other Scotch game of whisky-drinking, excess in it is not injurious to the health.

SIR WALTER SIMPSON
("In Praise of Golf")

were like the Model T Ford compared to a modern automobile. The wooden club with its torque could be twisted almost ninety degrees. The wooden shafts had to be heavy in order to prevent their breaking, to the end result that their balance between shaft and head was totally different from that of modern clubs, where the shafts are thin, made of steel, and the heads can therefore accumulate more weight.

From the coming of the matched set of golf clubs there has been brought about a change in the pattern of the swing. The pros often use the expression "one-piece swing." This can best be explained by saying that they use the same swing from

Reprinted from Open Championship program.

tee to green, changing only the club which they are using to obtain the required results. With the old-time clubs the better players, having favorite clubs, were more inclined to "finesse" their shots. They would force a mashie iron into a mid-iron, or a mashie into a six-iron, either by easing up the blow or laying back the club. This necessitated a flexibility in their swings which prevented them from becoming well-grooved as the pros groove their swings now. Thus, the execution of the swing twenty years ago was much more conducive to flaws.

Sarazen's Example

In my opinion, the beautiful Jones swing of the twenties, together with the precision tools of today, would make this great champion a consistent winner if he were playing in the same era with the current best. Look, for example, at Gene Sarazen who, at 53, is shooting in the 60's, and hitting the ball farther and better than he ever has before. With the putts dropping as they used to for the Sarazen of the twenties, and with none of the weariness which comes with age, he would still be a serious contender in any championship because his swing and his game have held up remarkably well down through the years.

Suppose an aluminum bat should be developed for baseball which had a weighted end, making it possible for a player to swing faster, and at the same time, to have the bat's massive weight at its hitting end, where it is most effective in propelling the ball. Suppose, in addition, baseball had a livelier ball. Then, surely, a good player would be able to hit 100 home runs a year. Would he, then, be a better player than Babe Ruth, who batted 59 or 60 home runs in a year with the wooden bat and the less lively ball? The only possible way you could make comparisons under such conditions would be to have the fences moved back, according to the distance the better equipment added. *Then* you could make a comparison between baseball's yesterday and today.

The same thing applies to golf's championship courses. The equipment and the

ball have been improved. The maintenance of courses has been brought to fine perfection. Rough is no longer the factor it used to be, because mechanized equipment has made it possible to maintain rough in better condition. However, during all this change the architecture of many courses has remained exactly the same. Naturally, the advantage has been to the player, who has outmoded the values previously set up to penalize him, perplex him, make him maneuver, and above all, to make him play his shots accurately.

For nine years, now, we have made tests at the Open Championships. These tests have been made for a definite purpose: to find out how accurate today's players are, and what should be considered a poor shot or a good shot.

Throughout these tests we have come to two definite conclusions: first, that modern players are hitting the ball farther, and second, that they are hitting the center of the fairway more often. Therefore, it is my contention that values should be tightened to meet the high standards which the great improvements in clubs and balls have made possible. In doing this, traps must be moved out to where they will have the same meaning they had in the Jones era, and fairways must be narrowed to develop a comparable latitude for error as when they were played by wooden-shafted clubs.

In tightening these values we have one sole objective—to test the play of modern golfers, so that the best man wins, and the golfer who has made the least shots and played the most brilliant golf is declared the champion. The tightening of any values must be done fairly. There should be no tricks, nor any trickiness on any part of the course.

Baltusrol's Characteristics

In studying the Lower Course at Baltusrol, one should have an understanding of the general characteristics of the course. It is different from Merion, Oakland Hills, and Oakmont, as it should be. Each course should, and does, have its own individuality.

All four courses are blessed with excellent green contours, and while they vary in

their quality, all must be given careful study and the deft touch. Baltusrol's greens are large. They are filled with soft hollows and imperceptible crowns which make the simplest-looking putt require keen concentration and a delicate touch. The short holes and the pitch holes are trapped in the front, protecting the various pin locations. The longer holes are trapped at the side, with some traps nipped in slightly across the corners of the green. The fairway targets are not nearly as severe as those at Oakland Hills, where double targets were a requirement in the play of the holes: one from the tee and one from the target area to the green. Nonetheless Baltusrol's target areas are well-protected, either in the form of traps (these, while fewer, are nonetheless effective) or in the form of rough which has been brought in to a just width. In addition to these characteristics, there are several holes which have partially blind surfaces, where the golfer can see the pin but not the surface of the green. These surfaces adroitly conceal the guile which lies there, and this lack of openness, or frankness, can often be most deceptive and an insidious stroke-waster.

The terrain of Baltusrol's Lower Course is, for the most part, gently rolling. There are few sidehill lies such as one encounters at Oakmont and Merion. The course for the Open measured 7,027 yards—mostly of the lush fairways one ordinarily finds at Baltusrol in June. Each of these yards measures a full 36 inches—7,027 yards of championship golf.

The Key Holes

The holes contestants had to worry most about were: *Number 1*, for its boundary flanking the left side, while the player was still under the tension of starting out; *Number 4*, which, from its back tee, is one of the great holes of golf, both scenically and in its playing value; *Number 6*, with its crowned target area and its long second into a tightly trapped green; *Number 10*, with its position play from the tee and protected pin positions on either side of the green surface for its second shot; *Number 11*, with its protection at the green, particularly when the pin was at the left-hand

side; *Number 15*, with its tight target trapping, and bold trapping in the face of the green surface and its crowned, uphill slopes; *Number 16* from the back tee, when the pin was at the right; *Number 17* because this is a great par 5 throughout; and *Number 18*, because this is a strong finishing hole, particularly if a 4 is required to tie.

Although the Lower Course's seventh hole is normally played as a par 5, it was reclassified as a par 4 for the Open Championship, and as now designed is one of the most interesting par 4s on the course (however, the original front tee was used in the Open).

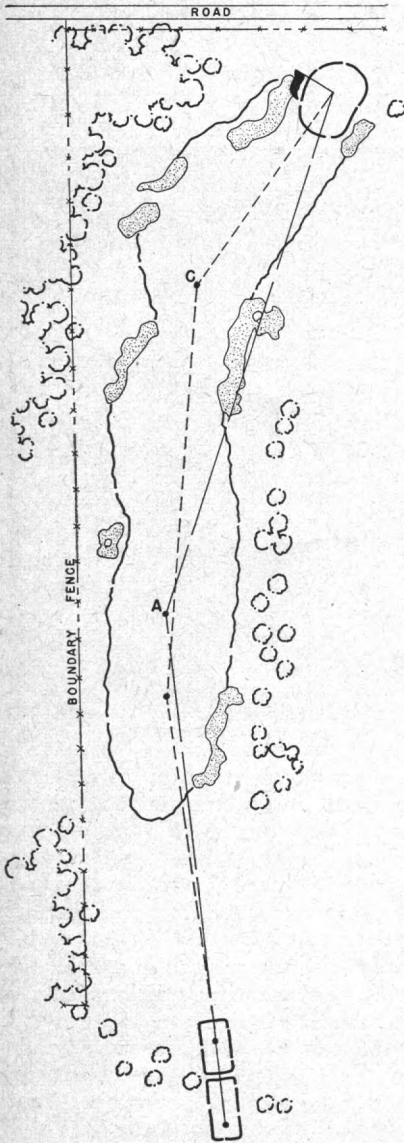
An Example

The two drawings illustrate how the redesign of a golf hole can sharply increase the challenge it offers to top-flight golfers.

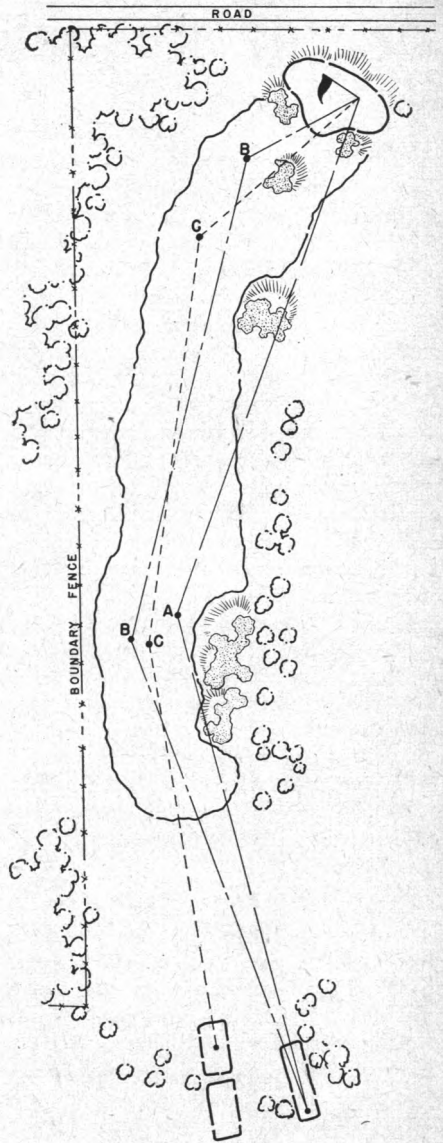
As originally designed the expert golfer, with his drive landing at A in the diagram, could hit his second shot boldly for the green with only one trap (approximately half way to the green from his hitting position) available to catch a badly hit second. Note, too, that the traps on each side of the green, as the seventh was originally designed, provided a wide-open approach. Route C is shown to indicate the approximate play of the original seventh by an average golfer, content to seek his 5.

As redesigned, the seventh hole presents a player with considerably more hazards. His alternative routes are indicated as A and B in the right-hand diagram. If he elects route A he must hit long and accurately, over troublesome traps, on his drive, and his long second to the green must cross not only a mid-way trap, but one directly in his line of approach at the green's edge. Only two perfectly hit shots, with his second able to hold the fast green, will do the trick for him. The expert in a less gambling frame of mind can also choose route B, in which case he must play his second shot without hope of reaching the green, but with the chance that he can chip closely enough on his third shot to be in position for one putt. Route C is shown to indicate the way in which an average player can be expected to play this seventh hole as now laid out.

How Baltusrol's Seventh Hole Was Toughened



ORIGINAL DESIGN



REVISED DESIGN

Drawings from the office of Robert Trent Jones

THE INTRODUCTION OF THE RUBBER BALL

by

JOHN P. ENGLISH

USGA

Assistant Executive Director

THE RUBBER BALL was the invention of Coburn Haskell, a Cleveland golfer, in association with Bertram G. Work, of the B. F. Goodrich Co., at Akron, Ohio. In 1898 Haskell adapted the art of winding rubber thread produced by Goodrich under tension on a solid rubber core to produce a ball far livelier than the gutta.

The earliest covers were of black gutta percha, lightly lined by hand. Paint tended to fill the indentations, causing the balls to duck in flight just as had the first, smooth gutta balls. Dave Foulis, a Chicago professional, put one in an Agrippa mold and produced the bramble marking which was common to both the late gutta and early rubber balls.

Haskell balls were placed on the market by Goodrich in 1899 and became known as "bounding billies." It is estimated that they could be hit about 25 yards farther than the gutta, just as the gutta was about 25 yards longer than the feathery. The consensus at first, however, was that the distance a player gained did not offset the difficulty of controlling the lively ball on the green.

Travis Proves the Point

Walter J. Travis, considered the best putter of his day, resolved this debate by using a Haskell ball from an Agrippa mold in winning the USGA Amateur Championship in September, 1901. The gutta thereafter became a relic of the past, and the game was again revolutionized and popularized as it had been with the advent of the gutta.

The day of the ball made by hand in the professional's shop was then ending. A. G. Spalding & Bros., at Chicopee, Mass., a manufacturer of sporting goods, had un-



WALTER J. TRAVIS

dertaken production of gutta balls in 1898 and obtained a license to produce its first rubber ball, the Spalding Wizard, in 1903. Soon thereafter the balata cover was developed for Spalding, and its improved adhering qualities made it an important innovation.

Earliest experiments with the rubber ball concerned the core. It was determined that the best cores, for resilience, were mobile cores which offered least resistance to distortion of the ball caused by clubhead impact. Operating on this theory, the Kempshall Golf Ball Co. produced the Kempshall Water Core, in which a small sac of water was substituted for solid rubber. The competition to produce a longer ball was under way. Manufacturers tried lead in solution, in an effort to combine weight with a mobile core, but lead proved injurious to curious children and animals. Zinc oxide

From an exhibit of the development of clubs and balls in "Golf House."

was substituted, but the pigment tended to settle and unbalance the ball. In the Twenties, true solutions involving glue, glycerin and water were developed for first-line balls.

More telling improvements have been made in winding, the critical factor in the modern ball. Machines replaced men and were constantly improved for this process. The race was to him who could obtain the greatest tension—to him who could most closely approach the breaking point of rubber thread. The earliest thread was of wild rubber from the Amazon River basin; development of plantation rubber greatly improved the quality of thread for this race.

Early rubber balls were made with the bramble and reverse mesh markings of the gutta ball, but experiments developed improvements as they revealed the best relationship of both depth and area of indentation to the ball's total surface. William Taylor, in England, reversed the markings on his molds to produce the dimple, in contrast to the bramble, in 1908. The mesh, in contrast to the original reverse mesh, was a natural aftermath.

Sizes and Weights

Haskell balls at first were light and large, about 1.55 ounces in weight and 1.71 inches in diameter, and they floated. In the absence of regulations governing size or weight, manufacturers pursued one another's

leads in the quest for the most efficient combination. Heavy solutions in the core increased the weight to about 1.72 ounces in the first decade. Then both size and weight underwent a gradual reduction to 1.62 ounces by 1.63 inches about the time the Haskell patent expired in 1915.

Expiration of this patent increased the competition, which had tended to make courses obsolete. Therefore, in 1920 the USGA and the Royal and Ancient Golf Club of St. Andrews, Scotland, agreed jointly that (1) after May 1, 1921, balls used in their Championships must weigh not more than 1.62 ounces and measure not less than 1.62 inches, and (2) the two organizations would take whatever steps they deemed necessary in the future to limit the power of the ball. The ball actually was unchanged by this regulation; it continued to measure 1.63 inches, .01 inch above the minimum.

In 1923, the USGA decided that the power should be reduced. A series of experiments under William C. Fownes, Jr., and Herbert Jaques, Jr., led to introduction in the United States in 1930 of the so-called "balloon ball," weighing not more than 1.55 ounces and measuring not less than 1.68 inches. This ball, with no regulation of its velocity, became standard in the United States on January 1, 1931, and was the first deviation from the British ball. It proved too light to hold on line in flight in a wind or on a green as it lost momentum, and it survived only one year.

The present slightly heavier ball, weighing not more than 1.62 ounces and measuring not less than 1.68 inches, became standard in the United States on January 1, 1932. The velocity of this ball was not regulated, however, until the USGA completed a satisfactory testing machine in 1941. Since January 1, 1942, the USGA has required that the velocity of the ball be not greater than 250 feet per second when measured on the Association's machine under specified conditions.

Effect on Clubs

Golf was being overtaken by the industrial revolution when the rubber ball came into the game at the beginning of the

New Members of the USGA

REGULAR

Dallas Hilliard Golf Club, Texas
Hobart Golf and Country Club, Okla.
Meadowbrook Golf and Country Club,
Kans.
Paris Mountain Country Club, S.C.
Tupper Lake Country Club, N.Y.
Twaalfskill Club, N.Y.

ASSOCIATE

Borinquen Golf Club, Puerto Rico
Cedar Hills Golf Course, Ga.

twentieth century. These two factors wrought major changes in the clubs and the methods by which they were produced as craftsmanship moved out of the individual professional's shop and into the factory.

The harder rubber ball brought about the use of persimmon and later laminated clubheads. Hard insets appeared in the faces. Increased demand led to the adaptation of shoe-last machine tools for the fashioning of wooden clubheads. Sockets were bored in the hosels, and shafts were inserted rather than spliced. Drop-forging almost completely replaced hand-forging in the fashioning of iron clubs, and faces were deepened to accommodate the livelier ball and were machine-lined to increase the spin on the ball in flight. Stainless steels replaced carbon steels. Seamless steel shafts took the place of hickory. Composition materials were developed as an alternative to leather in grips, and the grip foundations were molded in so many ways that they were regulated in 1947. Inventive minds created novel clubs, not only center-shafted and aluminum putters and the sand wedge but also types which were such radical departures from the traditional form and make that they could not be approved by the USGA or by the Royal and Ancient Golf Club of St. Andrews, Scotland.

These changes had their genesis in the United States when Julian W. Curtiss, of A. G. Spalding & Bros., purchased some clubs in London in 1892 for resale in his company's retail stores. Two years later, Spalding employed some Scottish clubmakers and began producing its own clubs.

Hand-modeling of woods and hand-forging of irons naturally did not long survive the demands of factory production. Within the first decade, the Crawford, McGregor & Canby Co., in Dayton, Ohio, a maker of shoe-lasts, was turning out wooden heads, foundries were converting drop-forging processes to iron heads, and Allan Lard, in Chicopee, Mass., was experimenting with perforated steel rods for shafts.

A. W. Knight, of the General Electric Co., in Schenectady, N.Y., joined this in-

ventive movement and produced an aluminum-headed putter with the shaft attached near the center, instead of at the heel. Walter J. Travis, of New York, used this "Schenectady" putter in winning the British Amateur Championship in 1904, and center-shafted clubs subsequently were banned in Britain.

The import of all these developments was such that, in promulgating its revised code of Rules in September, 1908, the Royal and Ancient Golf Club of St. Andrews appended the notation that it would not sanction any substantial departure from the traditional and accepted form and make of golf clubs. This principle has been invoked many times in an effort to preserve the original form of the game.

Iron Club Faces

When Jock Hutchison won the British Open in 1921 with deeply slotted faces on his pitching clubs, the Royal and Ancient Golf Club banned such faces, and the USGA concurred with a regulation governing markings which became effective in 1924. After Horton Smith had so effectively used a sand wedge with a concave face designed by E. M. MacClain, of Houston, Texas, the principle of concavity was banned in 1931. However, Gene Sarazen developed a straight-faced sand wedge and used it so well in winning the British and USGA Opens in 1932 that he completed the revolution of bunker play.

Experiments with steel shafts went through several phases. Lard's perforated steel rod was no substitute for hickory, and the locked-seam shaft proved not the answer, either, although the USGA approved such shafts in 1924. However, in 1924, the Union Hardware Co., of Torrington, Conn., drew a seamless shaft of high carbon steel which could be heat-treated and tempered. This came into the game in the late Twenties, was approved by the Royal and Ancient Golf Club in 1929, and substantially replaced hickory in the early Thirties.

Improvement of the steel shaft was accompanied by the general introduction of numbered clubs, rather than named clubs,

The patent papers for the Haskell ball

BERTRAM G. WORK, OF AKRON, AND COBURN HASKELL, OF CLEVELAND,
OHIO.

BALL.

SPECIFICATION forming part of Letters Patent No. 629,834, dated April 11, 1899.

Application filed August 9, 1898. Serial No. 688,152. (No model.)

To all whom it may concern:

Be it known that we, BERTRAM G. WORK, residing at Akron, in the county of Summit, and COBURN HASKELL, residing at Cleveland, 5 in the county of Cuyahoga, State of Ohio, citizens of the United States, have invented a new and useful Improvement in Balls, of which the following is a specification.

Our invention is in the nature of an improved ball for use more especially in the 10 game of golf, though it may be used in other games where a ball of similar properties is desired.

Our object is to provide a ball for the above 15 purposes which shall possess the essential qualities of lightness and durability and which shall also have the property of being comparatively non-resilient under the moderate impacts incident to its use, but highly 20 resilient under the stronger impacts.

We accomplish the objects sought by making the main body of the core of rubber thread wound under tension into spherical form and providing the same with an adequately-thick 25 covering of gutta-percha or one of its substitutes, such as balata gum, the covering possessing the attributes, comparatively speaking, of inelasticity, toughness, hardness, and

gree of plasticity, as by dipping it in boiling water, and then placing the core thus wrapped in a mold and subjecting the whole to sufficient pressure to form it to the exact 35 shape desired, which shape is retained on cooling; but the shell may be produced by any other method which may be found practicable. The shell thus formed to be effective must be of such thickness as to remain 60 comparatively rigid under the moderate impacts to which the ball is subjected, as in the case of light blows with the golf-club or on striking the earth, but to yield under the more violent impacts, as in "driving," where- 65 by the force is brought to bear upon the elastic core.

B is the complete ball, and B' B² the halves of the comparatively unyielding shell which receives the elastic core A. The exterior surface of the ball may be roughened, as shown 70 in Fig. 1, by using a mold having intersecting ridges on its inner surface.

Fig. 5 shows a complete half-section of the ball, the core being shown as made simply by 75 winding a rubber thread upon itself to form a sphere.

Fig. 6 shows the rubber winding inclosing a small central-core-section C, which may be

and by the merchandising of matched sets, rather than individual clubs; clubs had become more numerous and more finely graduated than the names which had been applied to them and shafts could be manufactured to specifications for flexibility and point of flex. Where formerly a golfer seeking new clubs went through a rack of mashies until he found one that "felt right" and then tried to find other clubs of similar feel, he now bought a whole set

manufactured to impart the same feel. The merchandising aspect of this development was perhaps something more than a happy coincidence for the manufacturers. In any case, the merchandising opportunities inherent in the numbered and matched sets were carried to an extreme, and in 1938 the USGA limited to fourteen the number of clubs a player might use in a round. The Royal and Ancient Golf Club concurred in a similar edict the next year.



THE REFEREE

Decisions by the
Rules of Golf Committees

Example of symbols: "USGA" indicates decision by the United States Golf Association. "R & A" indicates decision by the Royal and Ancient Golf Club of St. Andrews, Scotland. "54-1" means the first decision issued in 1954. "R.37-7" refers to Section 7 of Rule 37 in the 1954 Rules of Golf.

Ball Played from Wrong Tee

USGA 54-5

D. 29; R. 7-2, 13-2, 38-3

Q: Two women were playing an eight-hole medal play sweepstakes. They had the option of teeing off either the first tee or the tenth tee, so they chose the tenth tee. When they got to the eighteenth tee, one of the ladies accidentally teed off the ninth tee. Her partner suddenly realized the mistake. Therefore, they decided to play off the eighteenth tee. The lady playing off the ninth tee by accident decided to mark the misplayed tee shot so she could play it when she came around to play the second nine, which she did.

Question by: AL MAUS
LOS ALTOS, CAL.

A: The lady who played from the ninth tee instead of the eighteenth actually played a ball from outside the teeing ground in violation of Rule 13-2. Since the competition was at stroke play, she was required to count the stroke and then play from within the teeing ground. If she did not so count the first stroke in her score for the hole, at the time she reported her score, she incurred a penalty of disqualification under Rule 38-3, unless the committee modified the penalty under Rule 36-5.

If she did count that stroke, she incurred no other penalty there, but the definition of a stipulated round (Definition 29) requires that the eighteen holes be played in their correct sequence and the use of the ball played inadvertently from the ninth tee when she came to that hole later would violate Rule 7-2, and the player would have no acceptable score.

The fact that the player marked and lifted the ball played inadvertently from the ninth tee is irrelevant in the circumstances.

Claim on Bye Holes

USGA 54-6

R. 3, 11-1

Q: Would you be kind enough to give me a ruling on the following:

A has 16 clubs in his bag and wins a match against B, 6 and 5. They played the remaining five holes. On the sixteenth hole B looked at A's bag and counted 16 clubs. He claimed the match from A.

Question by: PAUL SCOTT
LOS ANGELES, CAL.

A: Inasmuch as B did not enter a claim before leaving the thirteenth green, as required by Rule 11-1, the match stands as

played. A was the winner by a score of 6 and 5.

If a claim had been entered within the time limit, however, A would have been subject to disqualification for his violation of Rule 3.

Caddie Picks Up Ball

USGA 54-7

R. 16, 36-7.

Q: In the semi-final of the mixed four-some tournament played with selected drives at the Dubsdread Country Club, Orlando, Florida, Clarence Doser and Mrs. Beverly Hanson Silvernail were playing George Bolesta and Mrs. Grace DeMoss Smith. The match was even on the 18th tee.

Doser hit his tee shot into the trees on the left of the fairway. Mrs. Silvernail hit her ball to the right but apparently in a good spot. The two partners went to check Doser's ball before deciding which ball to play. After they decided to play Mrs. Silvernail's ball, she picked up Doser's ball and they started back. Upon instructions from someone in the gallery the caddie picked up her ball, which he quickly dropped again in approximately its original position.

The questions raised by this action were:

1. Since the instructions to the caddie came from the gallery, could it be considered that the ball had been accidentally moved? Could it be played as it lay under penalty of one stroke under Rule 27-1c?

2. Could the advice of the gallery be considered an outside agency and could the ball be dropped again and put in play under Rule 27-1a?

3. A local rule permitted lifting the ball anywhere on the course. Could it be considered that the ball was lifted under this local rule?

The local committee's first decision was that, since the local rule permitted lifting a ball at any time, no penalty had been incurred.

After a second conference and a 15-minute delay the first decision was reaffirmed.

Then, as Doser was about to play his shot, an official announced that after another conference the committee had decided that the appropriate penalty was one stroke.

At this point the hole was played, and both teams made birdies. The committee contacted a USGA official by telephone and the USGA official advised that under the Rules of Golf a penalty of loss of hole had been incurred by Doser and Mrs. Silvernail. They had therefore lost the match 1 down.

Would you please explain the basis for the decision by the USGA official?

Also, in view of the several decisions rendered, when is a committee's decision final?

Question by: CLARENCE J. DOSER
BETHESDA, MD.

A: The decision was made on the basis of Rule 16 of the Rules of Golf which provides in part:

"A ball shall not be touched purposely and must be played as it lies except as otherwise provided for in the Rules or Local Rules . . ."

Any local rule which permits a player to lift a ball anywhere on the course is in conflict with the Rules of Golf, and specifically with Rule 36-7, and cannot be interpreted by this Association. Rules 27-1a and c do not apply.

It would appear that the committee rendered three decisions before Doser played a stroke but that the case remained open until it was finally resolved by the committee after consultation with a representative of this Association. Therefore we would not consider that any injustice was done by changing the decisions or that a "final" decisions had been altered.

Spectator Plays Test Stroke

USGA 54-8

D. 2; R. 9-1, 11-1, 37-7

Q: Loras College, of Dubuque, Iowa, was playing Loyola University. In a four-ball match A had about a 40-yard approach shot to make and a member of his

team who was not playing but just following the match took one of his clubs and a ball and, from within two feet of our opponent's ball, hit it to the green to test it in order to see if the green would hold a shot. It didn't hold the shot and consequently A played a pitch and run shot onto the green. My partner and I protested the hole, but our protest was overruled at the club house.

I would appreciate it very much if I could have your ruling on the situation.

Question by: TOM BRAAK
LORAS COLLEGE
DUBUQUE, IOWA

A: It is assumed that A was aware of and took no action to stop the irregular procedure of the other person. On that basis, A must be considered a willing party to a violation of Rule 9-1 (see Definition 2). If a claim was properly made under Rule 11-1, A was disqualified for the hole. The penalty would not have applied to A's partner in the four-ball match (Rule 40-3g).

There is also the further question whether A delayed play under Rule 37-7.

Committee May Reverse Decision

USGA 54-9
D. 4; R. 11-3, 34-3b

Q1: Can a committee reverse its decision 24 hours after score is posted?

A1: In stroke play committee may alter its decision if circumstances justify.

Ball Strikes Flagstick

Q2: Player in stroke play hits ball into hole while flagstick is in hole and attended. Ball stayed in hole. Does player take two-stroke penalty?

A2: Player incurs two-stroke penalty if ball strikes attended flagstick in stroke play. See Rule 34-3b. When flagstick is in hole, virtually impossible for ball to be holed without striking flagstick. See Definition 4.

Questions by: WAYNE CLARK
EVANSVILLE, IND.

USGA PUBLICATIONS OF GENERAL INTEREST

THE RULES OF GOLF, as approved by the United States Golf Association and the Royal and Ancient Golf Club of St. Andrews, Scotland, effective January 1, 1954. Booklet, 25 cents (special rates for quantity orders). Poster, 25 cents.

ARE YOUR LOCAL RULES NECESSARY? a reprint of a USGA Journal article containing recommendations regarding local rules. No charge.

THE RULE ABOUT OBSTRUCTIONS, a reprint of a USGA Journal article. No charge.

USGA GOLF HANDICAP SYSTEM FOR MEN, containing recommendations for computing Basic and Current Handicaps and for rating courses. Booklet, 25 cents. Poster, 10 cents.

THE CONDUCT OF WOMEN'S GOLF, containing suggestions for guidance in the conduct of women's golf in clubs and associations, including tournament procedures, handicapping and course rating. 25 cents.

HANDICAPPING THE UNHANDICAPPED, a reprint of a USGA Journal article explaining the Callaway System of automatic handicapping for occasional players in a single tournament. No charge.

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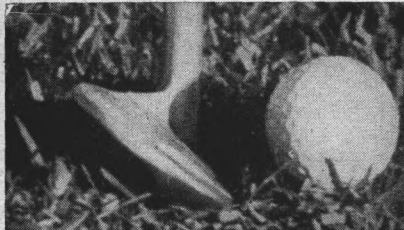
AMATEURISM IS IN THE HEART, a reprint of a USGA Journal article by E. G. Grace. No charge.

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USGA JOURNAL AND TURF MANAGEMENT, a 33-page magazine published seven times a year and containing authoritative information on the Rules of Golf, USGA championships, handicapping, amateur status, greenkeeping methods, clubs and ball, new trends and the play of the game. \$2 a year.

These publications are available on request to the United States Golf Association, 40 East 38th Street, New York 16, N. Y.



Better Turf for Better Golf

TURF MANAGEMENT

from the USGA Green Section

Be Careful With Organic Fertilizers Containing Urea

by CHARLES G. WILSON

Western Director, USGA Green Station

Urea is an inexpensive, synthetic organic source of nitrogen. Often it compares favorably in cost per unit of actual nitrogen with other water soluble sources like ammonium sulfate, ammonium nitrate or calcium nitrate. For this reason it deserves consideration when a fast-acting nitrogen material is desired to stimulate rapid growth.

As with any water soluble source of nitrogen, urea is short-lived and can burn the grass unless proper precaution is taken to water immediately following an application. This burning factor, plus an over-stimulation of the turf which intensifies disease problems, has been noticed by a few of our Member Clubs.

The responsibility for turf damage lies not with the urea or with the superintendent but with the manufacturers through misrepresentation, and state fertilizer laws that allow urea to be listed with other organic sources of nitrogen. To cite an example, the California fertilizer code requires a manufacturer to specify the minimum percentage of nitric, ammoniac, organic nitrogen and total nitrogen from all sources. It is also necessary to state the specific materials from which organic nitrogen is derived, and cyanamide and urea may be claimed as organic nitrogen.

Thus it is possible to purchase an all-organic 6 per cent nitrogen fertilizer which reacts in a manner that closely approaches ammonium sulfate. One brand that we recently checked fell in this category, with the organic sources listed as "urea, cyanamide, tankage and seed meals." Cyanamide is not of great importance as a large source of readily available nitrogen in mixed fertilizers, since it is used primarily as a physical conditioner. A letter to the manufacturer of this material requesting a percentage breakdown of the various organic sources failed to elicit the courtesy of a reply. A check with the state fertilizer control board's chemist further informed us that even a chemical analysis of the material would be no guarantee that subsequent shipments would have the same percentage breakdown. Thus, a club using this material would never know exactly what to expect in the way of turfgrass response, unless a chemical analysis is made each and every time a new shipment is purchased.

True Organics Release Nitrogen Slowly

One may well ask: "Why all the fuss? The fertilizer must have the minimum amount of nitrogen listed on the bag, and what difference does it make whether the

source is water soluble or slowly available?"

The answer to this question is:

1. True organics (turf agronomist's term) like activated sewage sludge, seed meals and tankage release their nitrogen slowly over a long period of time. This allows the superintendent to fertilize less frequently and at heavier rates for any given application. The result is more uniform playing conditions for the golfer and under most circumstances a decided savings in labor.

2. True organics can be applied at heavier rates than water solubles without burning the turfgrasses. With many clubs this factor is important because of inexperienced and careless help. Under most conditions it is not even necessary to water immediately following an application.

3. True organics react when conditions are favorable for grass growth. During cold weather they do not break down to release their nitrogen, thus little fertility value is lost through leaching from winter rains.

4. True organics are more costly per unit of nitrogen. Seed meals and tankage command a high price for animal feeds, and activated sewage sludge is costly to process. Therefore, an organic nitrogen fertilizer which contains a high percentage of inexpensive urea should sell at a price only slightly higher than other inexpensive sources of water soluble nitrogen. It is from the standpoint of comparable costs as well as reaction that misrepresentation can take place.

You Have The Right to Know

Perhaps it would be wise again to state that the USGA Green Section holds no

Turf Management

The book "Turf Management," sponsored by the United States Golf Association and edited by Prof. H. B. Musser, is a complete and authoritative guide in the practical development of golf-course turfs.

This 354-page volume is available through the USGA, 40 East 38th Street, New York 16, N. Y., the USGA Green Section Regional Offices, the McGraw-Hill Book Co., 350 West 42nd Street, New York 36, N. Y., or local bookstores. The cost is \$7.

brief against the use of water soluble sources of nitrogen. Many superintendents use nothing else, and several use a combination of both water solubles and true organics. Those who rely on water solubles in preference to true organics find that they must apply them at lighter rates, and do so more frequently to provide the same turf density without over-stimulation of turf growth. In the final analysis, the amount of actual nitrogen applied, regardless of source, is the important point to remember.

This article was written to warn our Member Clubs against buying a pig in a poke. Even though it is not required by law, the manufacturer should be willing to state to the individual club the percentages of all types of materials listed on the analysis label. This must be done before the superintendent can make a valid cost comparison and estimate the expected turfgrass response to any given brand of fertilizer.

WESTERN RESEARCH ACTIVITIES

Flotal Looks Good

Dr. Ray Lunt, Department of Irrigation and Soils, University of California, Los Angeles, recently established a series of seedbed preparation trials to gain preliminary information on the possible value of Flotal in comparison with manure to encourage early turf seedling vigor. Observation of this trial one month after seeding

indicated that Flotal was indeed beneficial to growth. This new conditioner is a ferric ammonium organic complex containing 2.4 per cent ammoniac nitrogen and 10 per cent iron expressed as metallic. Plots treated with this material had better color, more uniform coverage and considerably more vigorous growth.

According to Gordon Wyckoff, senior

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technician in charge of the turf plots, the Flotal treated plots were also easy to return to a suitable stage of tilth following a heavy rain which occurred shortly before they were to be seeded. Conversely, the manure treatments and check plots were difficult to rework into suitable condition for seeding. It would be interesting to see Flotal compared with other chemical soil conditioners on the market.

Manure Was A Failure

Under University of California, Los Angeles, conditions, steer manure used at the accepted rate of 25 pounds to 100 square feet failed to promote better growth than the untreated check plots. This confirms observations at other experiment stations.

Manure is too expensive when purchased for its fertilizer value. Heavy manure applications at the time of seeding can intensify disease. Under most conditions, turf growth furnishes ample amounts of organic matter to the soil.

Most manures available to our Member Clubs contain hidden costs. Rocks and foreign matter dull the mower blades. Noxious weed seeds are often planted through the use of manure. The bulk required to furnish any worthwhile amount of plant food means increased labor costs to apply manure. Because it is unsightly and messy, it causes player dissatisfaction for a considerable period of time following a direct application on fairways or tees.

The Danger Period for Putting Greens

by ALEXANDER M. RADKO

Northeastern Director, USGA Green Section

Most of the more serious putting-green troubles occur during the hot summer months when extended periods of heat and high temperatures occur. Diseases, excessive thatch, insects, wilting, drought, overwatering and other causes often result in the loss of turf. Under the classification of other causes we may list such things as poor drainage (surface, sub-surface, air and internal drainage).

Greens with built-in headaches, such as poor drainage, require special care during periods of high temperature and high humidity. While it is sometimes possible to get away with watering such greens in cool seasons with sprinklers, it is hazardous to attempt watering these greens except by hand when temperature and humidity are high. An experienced superintendent never sends a novice out to hand-water troublesome greens; only a veteran at the game fills this bill.

Disease troubles are also more bothersome during the hot, humid months. By and large, the superintendents who have followed a preventive schedule are the ones who usually come through in best shape. Disease organisms are ever present. They

may be in the soil awaiting the proper conditions for germination; they may be wind blown; they may be carried in on equipment or shoes or by other means. In whatever manner they arrive, they are in a resting stage, so to speak, awaiting the proper conditions to germinate and multiply, and multiply they do, at fantastic rates. Therefore, fungicides applied on a preventive basis keep the possibility of trouble from diseases to a minimum.

The most troublesome weeds over this period of high temperature and high humidity are crabgrass and silver crabgrass. The phenyl mercuric acetate products have been doing a nice job of controlling crabgrass in putting green turf if they are applied according to the directions of the particular product obtained.

Silver crabgrass, or goosegrass as it is sometimes called, is much more resistant to chemical treatment, and for the most part the laborious hand method is used for eradicating it as soon as it appears. Some superintendents have applied mixtures of herbicides at very light rates, with reportedly good success, on seedling silver crabgrass. Here again is an example of practical tests

preceding the research worker's findings, because the man on the job has to face such problems and do something about them, sometimes before researchers are able to get to the problem. It is hoped that the USGA Green Section's program of research on specific golf-course turfgrass problems will

help in bringing results to the superintendent sooner.

Bentgrass putting-green turf which goes into the hot humid months in healthy condition fares best. These months are good indicators of the limiting management practice on putting-green turf.

Cultivation of Turf

The cultivation of turf is one of the most important phases of modern turfgrass maintenance. For many years turf growers have felt that they were working at a disadvantage because it was not possible for them to till their soil in the same way that farmers used tillage to maintain good soil tilth.

Porosity has become an important word to the golf course superintendent. We are likely to think of soils in terms of the solid phase of the soil, yet the roots of the plant grow in the pores, not in the soil solids. Pore space makes up about half of the volume of a good soil.

Pore space is of two kinds; there is capillary pore space, which is usually filled with water when soil is reasonably moist, and there is non-capillary pore space, which provides drainageways for water that gravitates through the soil and air spaces when the soil is well-drained. We have come to believe a good soil should have about equal parts of the two kinds of pore space.

The pore space of the soil can be characterized in other ways. It can be textural pore space. These are the pores that result from a coarse soil texture. The sand particles, or larger particles of the soil fraction, fit together in such a way that there is a rather large space left between them. This kind of pore space cannot be changed by management. Only the addition of different size soil particles can change it.

The other kind of pore space with which we are concerned is structural pore space. Structural pore space results from the aggregation of the finer soil particles. This type of porosity can be effected by management of various kinds. Trampling when the soil is wet tends to reduce the amount of non-capillary porosity which depends upon structural characteristics of the soil.

The trampling causes the rearrangement of the soil particles which form the aggregates and a consequent fitting more closely together so that we do not have the larger non-capillary pore spaces through which excess water can move rapidly.

Non-capillary pore space of a structural nature can be affected indirectly by watering practices. If a small amount of water is applied at one time, the surface of the soil will have to be kept wet or grass will not live. When the surface is kept wet any kind of traffic will tend to rearrange the soil particles and compact the soil. On the other hand, if the turf is watered in such a way that the water soaks deeply into the soil, it will support turf without having to be watered so frequently. Therefore the top is allowed to dry and trampling does not affect it so severely.

Cultivation the Best Tool

Cultivation is perhaps the best tool for managing soils for maintenance of structural porosity. Cultivation of putting greens has been practiced for many years even though the practice was not considered to be cultivation in the days when hollow-tined forks were the chief implements for this purpose. Mechanical devices for cultivating turf have been of fairly recent origin. While many attempts were made prior to World War II to develop mechanical devices for cultivation, it was not until after the war that really successful machines for this purpose began to appear on the market.

There are several types of machines which have been designed to cultivate turf. The first attempts were solid-tined spikers; these were solid tines built on rollers so that when the roller was pulled across the green the solid tine would penetrate the

surface of the green, making small holes and breaking the turf. Other early attempts to develop mechanical spikers resulted in disk spikers. These also were pulled by hand across the green and the disk was serrated so that it did some slicing and penetrating of the turf.

Following the war, three new and distinct types of machines came on the market. One consisted of a series of drills that drilled holes into the soil. This machine did a very thorough job but had the disadvantage of being somewhat slow. Another machine had half round, curved, hollow spoons which were pushed into the turf as the revolving disk rolled forward. These hollow spoons are built in such a way that they enter and leave the soil at the same point so that they do not tear the turf severely. The spoons move under the soil so that the soil is stirred below the surface. The third type is a machine which has hollow tines mounted on a drum. These tines are pivoted in such a way that they are exerted from the drum as the tine comes down. If it strikes a rock or hard place it is pushed back into the drum and therefore does not break.

Cultivation has come to be an almost universally accepted practice on golf courses, and there are relatively few courses which do not have some sort of mechanical device for this purpose. The practice of cultivating turf as we know it at this time is relatively new and there are many variations of the manner in which the practice is carried on.

When to Cultivate

One of the important questions is *when* to cultivate. The time varies a great deal. Some golf courses need cultivation much more frequently than others. As in plowing, it is necessary that the soil be in good condition as far as moisture is concerned if the cultivation is to be successful. Cultivation of wet soils may result in even further compaction of the surface. If the soil is exceptionally dry, it may be difficult to get the cultivating drill, tine or spoon into the soil.

Another important consideration is to be sure that the grass is growing vigorously

COMING EVENTS

Aug. 3

Turf Field Day, Rutgers University, New Brunswick, N. J. Dr. Ralph E. Engel.

Aug. 9

Texas Turfgrass Association Field Day, Cedar Crest Golf Course, Dallas, Tex. Grover Keeton.

Aug. 19, 20

Twenty-third Annual Turf Field Days, University of Rhode Island, Kingston, R. I. Dr. J. A. DeFrance.

Sept. 8, 9

Turf Field Days, Pennsylvania State University, State College, Pa. Prof. H. B. Musser.

Sept. 15

First Annual Rocky Mountain Turfgrass Conference, Colorado A. & M. College, Ft. Collins, Colo. Prof. A. M. Binkley.

Sept. 17

Utah Turfgrass Conference, Salt Lake City, Utah. A. R. Emery, 721 East, 3120 South, Salt Lake City, Utah.

Sept. 21, 22

Eighth Annual Regional Turf Conference. State College of Washington, Pullman, Wash. A. G. Law.

Sept. 27, 28

Midwest Regional Turf Foundation Field Days, Purdue University, Lafayette, Ind. Dr. William H. Daniel.

Sept. 30

Northern California Turfgrass Conference, University of California, Davis, Cal. Dr. R. M. Hagan.

Oct. 4, 5

Southern California Conference on Turf Culture, University of California, Los Angeles, Cal. Dr. V. T. Stoutemyer.

Oct. 7, 8

Arizona Turfgrass Conference, University of Arizona, Tucson, Ariz. J. S. Falkner.

at the time cultivation is accomplished. On putting greens it is important that the turf heal rapidly any scars that are made. If the grass is growing well, scars will be healed very shortly. If the grass is growing rather slowly, scars may last for a much longer period.

Some operators are still concerned about what is accomplished by cultivation. Cultivation tends to break up a compacted layer at the surface of the green where it so often forms because of trampling when

the soil is wet. Cultivation improves the structural porosity just as plowing improves the structural porosity of the field soil. Improvement of porosity allows better penetration of water. It allows for better diffusion of air. These conditions, in turn, promote deeper and more profuse root growth. On putting greens that have a tendency to form a thatch, dry spots often form. These are localized dry spots. Cultivation tends to break through the layers of thatch and thus prevent the formation of such dry spots. Cultivation aids the movement of fertilizer downward to the root zone. Cultivation is also important in seedbed preparation. Many turf growers have found that they can prepare a seedbed without complete destruction of established turf and without disturbing the existing level or contour of the surface. Plowing, or disking, on the other hand, completely destroys the turf that is present and frequently calls for a releveling job.

How Surface Is Affected

Another question concerning cultivation is: "How does it affect the playing surface?" It is obvious that no kind of cultivation can be practiced on a putting green without doing some damage to the putting surface. The surface is roughened and must be smoothed again before putting can follow. There are many practices for accomplishing this end. Some operators break up the plugs after they have dried sufficiently by dragging with a flexible steel mat or a piece of chain-link fence. Other operators remove the plugs from the green. Whichever practice is followed, mowing will generally pick up the pieces of grass and small plugs that have not been worked back into the surface of the green, so that

it is left in fairly acceptable condition. In some cases, it may be necessary to topdress with a better soil material than that which existed within the green.

One of the severe criticisms that the superintendent often hears from his members is that the greens are disturbed by cultivation at the very time that they are in the best condition of the season. It seems unnecessary to the golfer to disturb an excellent putting green by cultivation just at this time. It is important that golfers understand the need for this, because it is at the time when grass is growing best that cultivation can be done with the least amount of net harm. If the superintendent waits until the greens begin to slow in their growth and become poor, cultivation will leave its mark upon the green for a long time. If, on the other hand, cultivation is accomplished when the green is healthy and vigorous, the scars following the operation will be healed in a relatively short time and the green will recover completely within just a few days. Correct treatment of healthy grasses will often prevent their becoming sick later on.

It is expected that cultivation will come to be practiced with even less disturbance than accompanies it at the present time. However, the good that results from this practice so far outweighs the relatively small inconvenience that comes to the players that it is extremely important for golfers to appreciate the advantages resulting from the operation.

Turf management techniques have been revolutionized by the practice of cultivation with modern machinery. These developments tend to make the superintendent's job a little easier and his turf a great deal better.

Soluble, High Analysis Fertilizers — 1954

In November, 1950, an article appeared in the USGA JOURNAL titled "What about Liquid Fertilizers?" Our readers were urged to examine carefully the prices of liquid fertilizers in comparison to the conventional, dry-type fertilizers. It was pointed out that liquid fertilizers had some special

uses but ordinarily they could not hope to compete with conventional fertilizers in expense or ease of handling.

The picture has changed somewhat in the four years since publication of that article. The use of these materials has been increased remarkably by farmers, garden-

ers, commercial vegetable growers, golf courses and other turf users. These materials are now a substantial part of the fertilizer trade. The technology of fertilizer manufacture and fertilizer handling has made rapid advances during recent years. It is now possible to buy liquid fertilizers and soluble fertilizer materials that have high analyses and approach very closely the conventional fertilizers in price.

Soluble fertilizers can be bought in two ways. They can be bought in dry form and be dissolved in water by the user, or they can be bought in liquid. There are certain advantages accompanying the use of high analysis fertilizers. They require less storage space, less handling and less cost for shipment. The soluble materials are clean. They are usually odorless, and they can be dissolved in water and automatically metered into irrigation water by syphon attachments. Those fertilizers which are marketed in the liquid form have the disadvantage of being more difficult to ship and of requiring more expensive containers.

Readers still are urged to judge fertilizers on the basis of values of the plant food contained in the fertilizers and upon the ease of application. Four years ago there were relatively few completely soluble fertilizers that could be called high-analysis materials. At the present time, fertilizers can be obtained that have as much as 61 per cent of total primary nutrients. Several examples are given here. A 23-21-17 fertilizer can be made from ammonium phosphate, urea and potassium nitrate. This fertilizer contains 61 per cent of total primary nutrients. Another one is a 20-20-20. This is made from a mixture of monoammonium phosphate, diammonium phosphate, urea and potassium nitrate. It contains 60 per cent of total nutrients and you will note that it is in the 1-1-1 ratio, which is quite popular among all types of growers. Still another one is a 15-10-14 fertilizer, containing 39 per cent total primary nutrients. This fertilizer is made from mixtures of ammonium phosphate, ammonium sulfate, and potassium nitrate. It is in the approximate ratio of 3-2-3 and

might be a fairly good fertilizer for putting green purposes where there is a high concentration of phosphorus already in the soil.

Mixing One's Own

There are a great many fertilizer mixtures of this type available on the market. It is possible, of course, to buy the fertilizer materials and mix them as needed. The table on the next page shows a number of high-grade nutrient sources and plant food content. If one does mix his own, there are a number of things that he must guard against. Some of these are inert ingredients that are insoluble and which may clog the syphon or the sprinkler. Compatibility of the materials used is important. Some of them may cause a reaction which will result in some insoluble precipitate which may clog the applicator or they may cause loss of ammonia gas. It is necessary to be sure that one does not mix materials together which will give one of these results. The user should also be familiar with the nitrogen source of the nutrients he is using. In cold weather, nitrification is slow; therefore, he should not use all urea or ammonia during the cool season. There should be some nitrate in the mixture so that it will be available immediately to the plant.

It might be well to point out that some soluble fertilizers have urea as the source of nitrogen. Urea is frequently spoken of as an organic nitrogen. Actually, it is a synthetic material that is completely soluble in water and needs only to go through the nitrification process to become available in the form of nitrate. Urea, while it is technically an organic source of nitrogen, behaves very much like inorganic sources of nitrogen. Therefore, users should not be misled into believing that they are using a material that will behave in the same manner as conventional organic fertilizers on their turf.

Another precaution is to make sure that tanks or irrigation systems are flushed out thoroughly with water following the use of soluble fertilizers. Many of them have a corrosive action when they are allowed to remain in contact with metals.

It is necessary that sufficient water be used with liquid fertilizers, or soluble fer-

tilizers, to prevent damage to the grass plants. Tests have indicated that the amount of fertilizer in water might vary from one-tenth of one per cent to 3 per cent, depending upon the season of the year and the type of plant which is being treated. It is believed that golf-course superintendents should confine their fertilizer irrigation water mixtures to the lower part of this range. In other words, one-tenth of one per cent of fertilizer in water means roughly one pound of fertilizer to 125 gallons of water. It is believed that it will be absolutely safe to use liquid fertilizers on any of the grasses that are grown on golf courses if the concentra-

tion of fertilizer is kept to this level. One may find from his own experience that he can increase the concentration of fertilizer a great deal, but he should certainly start with a relatively low concentration.

Source of Nutrients	Nutrient Content		
	N	P ₂ O ₅	K ₂ O
Ammonium nitrate	33.5	0	0
Ammonium sulfate	20	0	0
Sodium nitrate	16	0	0
Urea	46	0	0
Diammonium phosphate	21	53.8	0
Monoammonium phosphate	12.2	61.6	0
Potassium nitrate	13.7	0	46
Dipotassium phosphate	0	40	53
Monopotassium phosphate	0	51.6	34.2
Muriate of potash	0	0	62

CONSERVING SEED

Probably seed mixtures will cost about 50 per cent more than they did last year. The relatively light 1953 crop of Kentucky bluegrass has increased the demand for other permanent grasses and thus the price for all grasses has gone up. Therefore, these recommendations may be helpful.

1. Buy a mixture that exceeds minimum specifications for permanent grasses.
2. Buy the type of mixture seed that is suited to your needs.
3. Buy no more seed than you need.

4. Prepare the seedbed thoroughly—never sow seed except on a well-prepared seedbed.
5. Seed in early fall (especially in southeastern New York) or in early spring. Don't gamble with off-season seeding.
6. Fertilize your lawn with a complete fertilizer at planting time.

From the Westchester County Farm and Home News, March, 1954.

SUBSCRIBERS TO RESEARCH AND EDUCATION FUND

To assist the USGA Green Section to sponsor research on turf and its management and to help educate turf workers, the following have subscribed to the Green Section's new Research and Education Fund:

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IT'S YOUR HONOR

It Was a Pleasure

DEAR MR. GRAINGER:

I am deeply indebted to you and your associates in the United States Golf Association for the help given to the White House staff in the creation of a putting green on the lawn. As you may know, I enjoy and need the exercise I get from occasional golf practice, and this makes it easy for me to slip out for a half hour or so whenever I find the time.

Please convey to all whose assistance made the green possible the sense of deep appreciation I feel.

With warm regard,

Sincerely,

DWIGHT D. EISENHOWER

One Reaction

TO THE USGA:

Before the Open at Baltusrol becomes ancient history, I want to take this opportunity to congratulate you for the magnificent job that was done in handling this tournament.

Not only was the course in magnificent shape, but I thought it was a real test of championship golf and yet not unfair.

I played the course from the back tees the week before the tournament started, and, except for the astronomical distances one has to hit their tee shots these days in big tournaments, I thought the course was a fair test of golf, my score to the contrary.

ALLAN BROWN
NEW YORK, N. Y.

Editor's Note: The USGA Journal invites comments on matters relating to the welfare of the game and will publish them if space permits.

There Are Others

To the USGA:

I have been made a member of the Golf Committee of our local club and am apparently a unique golfer, in one way, which is that I have always had a deep interest in the Rules of Golf. I think the USGA is to be commended for the improvement and clarification of these rules that has taken place in the past few years.

FRANK H. MUELLER
DECATUR, ILL.

On "Winter Rules"

TO THE USGA:

Do, do keep up the good work in discouraging and abolishing so-called "winter golf." In the last few years, it has alarmingly almost become a part of the game, and if allowed to continue will surely hurt this fine game of golf as it has survived all these years. I should like to see inserted in the Rules of Golf a positive and definite rule . . . that any stated championship competition, on any level, local, district, state, sectional or national, would not be recognized by the USGA if "winter rules" were allowed.

MRS. FORREST BRUNDAGE
TOLEDO, OHIO

Nostalgia of "Golf House"

To the USGA:

I can assure you that I enjoyed making the contributions to "Golf House" and feel deeply honored that they were accepted.

The nostalgia of "Golf House," with its precious mementoes, still lingers with me, and I am planning to return to make a more complete examination of the contents.

HARRY GOTTSLIEB
ATLANTIC CITY, N. J.

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