



USGA JOURNAL

AND
TURF MANAGEMENT

THE END OF A LONG WAIT



Photo by John Zimmerman

Seven years ago Gene Littler, heralded as a player of infinite promise, missed an eight-foot putt that would have given him a tie for the Open Championship. Last month Littler's classic style and imperturbable temperament saw him through to the Championship with a 281 total at the Oakland Hills Country Club. Details of Littler's triumph begin on page 4.

JULY, 1961



USGA JOURNAL

AND
TURF MANAGEMENT

Published by the United States Golf Association

© 1961 by United States Golf Association. Permission to reprint articles or material in the USGA Journal and Turf Management is granted to publishers of newspapers, periodicals and books (unless specifically noted otherwise), provided credit is given to the USGA and copyright protection is afforded. Neither articles nor other material may be copied or used for any advertising, promotion or commercial purpose.

VOL. XIV, No. 3

JULY, 1961

Through the Green	1
Littler and the Open Finally Make Merger Joseph C. Dey, Jr.	4
The Undersize Golf Ball A Danger to the Game Clarence W. Benedict	10
Four Newcomers Named to Walker Cup Team	12
West Virginia's "Mr. Golf" Never Played a Stroke William C. Campbell	13
Duties of Officials Under the Rules of Golf	15
The Referee	22
Turf Management:	
Planning for Safety in Golf Course Work Andrew A. Bertoni	25
Factors Limiting Turf Quality W. Wayne Allen	30
It's Your Honor: Letters	33

Published seven times a year in February, April, June, July, August, September and November by the
UNITED STATES GOLF ASSOCIATION
40 EAST 38th ST., NEW YORK 16, N. Y.

Subscription: \$2 a year. Single copies: 30c. Subscriptions, articles, photographs, and correspondence should be sent to the above address.

Second Class Postage Paid at Pinehurst, N. C.

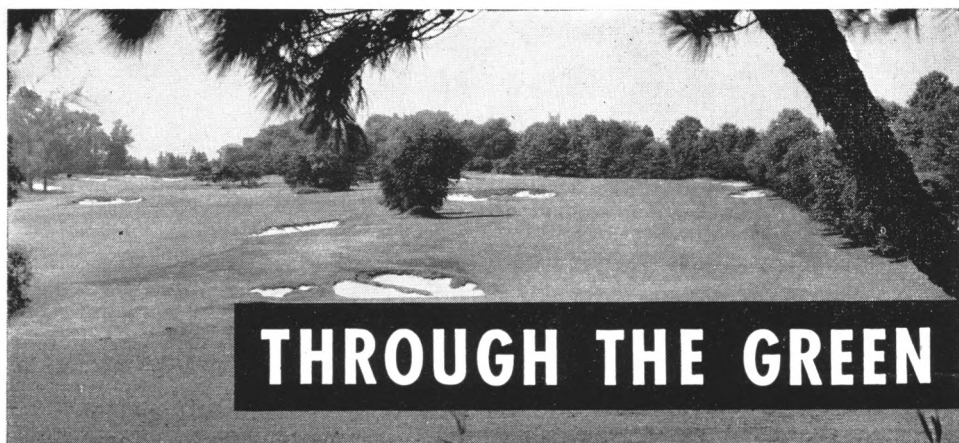
Editor: Joseph C. Dey, Jr. Managing Editor: Frank Hannigan. All articles voluntarily contributed.

USGA COMPETITIONS FOR 1961

<u>Championship or Team Match</u>	<u>Entries Close</u>	<u>Qualifying Rounds</u>	<u>Dates of Event</u>	<u>Location</u>
Junior Amateur	Closed	July 18	Aug. 2-5	Cornell University Golf Course, Ithaca, N.Y.
Girls' Junior	July 28	None	Aug. 14-18	Broadmoor Golf Club, Seattle, Wash.
Women's Amateur	Aug. 2	None	Aug. 21-26	Tacoma Country & C.C., Tacoma, Wash.
Walker Cup Match***	—	—	Sept. 1-2	Seattle Golf Club, Seattle, Wash.
Amateur	Aug. 9	Aug. 29	Sept. 11-16	Pebble Beach Golf Links, Del Monte G. & C.C., Pebble Beach, Calif.
Senior Amateur	Aug. 30	Sept. 19	Oct. 2-7	Southern Hills C.C., Tulsa, Okla.
Americas Cup Match****	—	—	Oct. 21-22	Club Campestre Monterrey, A.C., Monterrey City, N.L., Mexico

***Walker Cup Match: Men's amateur teams—Great Britain vs. United States.

****Americas Cup Match: Men's amateur teams—Canada vs. Mexico vs. United States.



THROUGH THE GREEN

The Secret of Golf

A SURMISE

He could loft a ball from the top of
his watch straight into his beaver
hat.

He could tee a ball on the windoy-sill
and pink the vagrom* cat.

He could putt from the top of the
oaken stair to a hole on the floor
below,

And niblick the sphere from a baby's
ear and the baby wouldn't know.

He could brassie some fifteen hundred
feet and clip off a daisy's top.

He could jigger the ball o'er a steeple
tall as most men would jigger a
cop.

He could stand on his head, to his
caddie's dread, and dismay of all
hard by,

And then, with the ease with which I
would sneeze, lift the ball from
a cuppy lie.

He could drive a ball for two hundred
yards to the blade of a carver,
keen,

And cut it in two as easy as you
could slice up sod from the green.
The bird that flies high up in the skies
he'd wing with his driving cleek,
And I've seen him graze as soft as
haze the down on a damsel's
cheek.

* A corruption of "vagrant"

But he never could win in the tourna-
ments, no matter how well he
played.

He'd never a cup on his mantel-piece;
in medals was never arrayed.

For though his game was the finest
golf that ever was witnessed yet,
He never could seem to comprehend
a bit of golf etiquette.

He'd cross the putt of the other man;
he'd play when nearer the hole.

He couldn't grasp the simplest rules
to save his golfing soul.

And that is why this golfer keen is
never "up," but "down;"

And that is why this King of the
Green doesn't wear the golfers'
crown.

The moral is clear, oh golfer bold, oh
golfer strong and true:

You may be able to whack the ball,
and make your opponent blue;

You may be able to do freak things,
and play past all compare;

But unless you learn the etiquette,
you'd better play solitaire.

Carlyle Smith

From "Harper's Magazine of 1899"

Record Junior Entry

The number of entries submitted for the USGA Junior Amateur Championship has increased every year since 1949. This year's record entry is 1,887, 23% greater than the previous high of 1,445 in 1960.

Among the entries are the sons of two distinguished golfing fathers. Marvin Ward, Jr., aged 16, and Joseph P. Ward, 14, will attempt to qualify in San Francisco. Their father won the Amateur Championship in 1939 and 1941 and has long been a professional. Sixteen-year-old Douglas Ford, Jr., a resident of Tuckahoe, N.Y., has been granted permission to qualify in Milwaukee. He's accompanying his father on the professional tour this summer.

Square Holes

Despite the presence of square holes a foot across, the players continue to find three putts a common occurrence at Sharjah, a small Royal Air Force station on the coast of the Persian Gulf.

There is no grass at Sharjah — only sand. RAF Sgt. David Ross, a Scot who is the station's physical training instructor, designed and built the course single-handed.

Ross at first tried regulation round holes but decided that the rough, sandy "greens" made putting an ordeal. His solution was to sink 12-inch-square wooden boxes into the sand.

Clubs of Champions

The latest additions to the Clubs of Champions display in "Golf House" are contributions by Carol Sorenson, 1960 Girls' Junior Champion, and Verne Callison, 1960 Amateur Public Links Champion.

Miss Sorenson donated her No. 2 iron, the club she used off the tee on the par-3 14th hole of her final match at The Oaks Country Club, Tulsa, Okla. She went ahead on that hole and kept the lead.

Mr. Callison's selection is the wedge he used to recover from the Bermuda grass rough of the Ala Wai Golf Course, Hawaii. He says: "Without it, I wouldn't have had a chance."

We hasten to correct an error that ap-

peared in the June JOURNAL which reported that Arnold Palmer donated a No. 3 wood to "Golf House." Palmer's donation is actually the driver he used on an historic shot to reach the 347-yard first hole at the Cherry Hills Country Club at the start of his fourth round in the 1960 Open Championship.

The Elephant Pit

A local rule at the Bombay Presidency Golf Club Ltd., Bombay, India, reads, "The area known as The Elephant Pit is a water hazard whether or not it contains water . . . The usual 'fee' for a ball returned by an outside chokra is two annas. Members are requested not to encourage these chokras on to the course to hand over balls, but to collect these personally or through their caddies at the course boundaries."

Back Issues of Rules Needed

The USGA is anxious to complete its set of back issues of The Rules of Golf booklet for the library in "Golf House." We would be grateful to any readers who can lead us to issues printed in these years: 1896 and prior, 1898, 1899, 1902 through 1904, 1906 through 1911, 1913 through 1919, 1924 and 1925.

Rain, Rain, Stay Away

Jim Ferree exemplified the determined professional preparing for the Open Championship after an unsatisfactory practice round at Oakland Hills last month. Ferree scampered to the practice tee, unsheathed his driver and then heard the peal of thunder. Ferree looked up at the sky and wailed, "Please don't rain on me; I need every minute I can get."

A Correction

The June Journal printed a reminder on Amateur Status that neglected an important point. The reminder said that: "Amateur Status is forfeited by one who sells golf merchandise in a golf shop at a place where golf is played, practiced or taught." To this sentence should have been added the phrase "after the 21st birthday."

Two Elder Statesmen

The USGA congratulates two professionals who have passed landmarks in long and distinguished careers.

George M. Gordon was recently honored at a dinner on the occasion of his 50th anniversary as professional at the Wanamissett Country Club, Rumford, R. I. He continues to be an active teacher of golf.

Mike Murra has retired after 36 years as professional at the Wichita Country Club, Wichita, Kansas. Mike's pupils included Fay Crocker, Marilyn Smith, Judy Bell, Barbara McIntyre, and Jimmie Vickers.

R & A Captain-Elect

Dr. William Tweddell has been nominated Captain-elect of the Royal and Ancient Golf Club, St. Andrews, Scotland. Dr. Tweddell, a general practitioner, won the British Amateur Championship in 1927 and was runner-up in 1935. He played for Great Britain in the 1928 Walker Cup Match and was Captain of the 1936 British Walker Cup Team.

Books Reviewed

Arnold Palmer's Golf Book, by Arnold Palmer (The Ronald Press Co., \$5.00). An instructional book by the 1960 Open Champion.

Fundamentals of Golf, by Dow Finsterwald with Larry Robinson, President of the Golf Writers Association of America (The Ronald Press Co., \$5.00). An instructional book by one of the most successful touring professionals.

The Masters, by Tom Flaherty (Holt, Rinehart and Winston, \$7.50). Traces the history of the Masters Tournament beginning with the first tournament in 1934. Color illustrations.

Writers Aid Turf Student

Robert E. Faust, of Matawan, N. J., recipient of the most recent scholarship awarded by the Metropolitan Golf Writers Association, received a B.S. degree at Rutgers University last month.

The award is restricted to students interested in the study of Turf Management. It is provided for by proceeds from the Writer's annual dinner.

Hands Across the Tee

The February USGA JOURNAL contained an invitation from the Latrobe Golf Club, Melbourne, Australia, to USGA clubs interested in inaugurating an intercontinental, interclub match.

The call was answered by the Biltmore Country Club, Barrington, Ill. After preliminary correspondence, a May date was set. Both clubs played one stroke-play round; the lower total of the 16 best net scores determined the winner. The Australian club won by 1,123 to 1,146. Cables were exchanged as soon as the final scores were posted.

A trophy has been donated by Lester Hilyard, a Latrobe member, who advises that his club hopes to add a club from Great Britain to the competition in 1962.

Necrology

Kerr N. Petrie, of Deland, Fla., who wrote golf 45 years for the New York Herald and its successor, the Herald-Tribune.

Hudson G. Samson, of Pittsburgh, former President of the Western Pennsylvania Golf Association. He was also President of the Longue Vue Country Club for the past nine years.

NEW MEMBERS OF THE USGA

REGULAR

Calif.	Coronado Men's Golf Club
Calif.	Monterey Bay Golf Club
Colo.	Glenwood Golf Club
D. C.	Oakcrest Country Club
Fla.	De Land Country Club
Hawaii	Aole Makana Golf Club
Iowa	Indian Creek Country Club
Ky.	Mt. Sterling Golf and Country Club
Ky.	Winchester Country Club
Md.	Maryland Golf and Country Club
Mich.	West Branch Country Club
Minn.	Forest Hills Golf Club
Minn.	Lost Spur Golf Club
Minn.	Worthington Country Club
Mo.	Heart of America Golf Club
N. H.	Kingswood Club
N. Y.	Corning Country Club
Ohio	Potter's Park Golfers Association
Okla.	Oil Field Recreation Association
Texas	Dallas Hilliard Golf Club
Texas	Lost Pines Golf Club
Wis.	Odana Hills Golf Association
Wis.	Quisconsin Town and Country Club

ASSOCIATE

Ill.	George Diamond Country Club
Minn.	Ramsey Golf Club
Miss.	Greenville Air Force Base Golf Course
Pa.	Brockway Glass Golf Course

LITTLER AND THE OPEN FINALLY MAKE MERGER

By

JOSEPH C. DEY, JR.
USGA Executive Director

The prize-giving at the National Open Championship had just ended. The new Champion was whispering a quiet question:

"How much do you think I ought to pay my caddie?"

This was Gene Alec Littler speaking—not a youngster fresh to the tournament circuit but a veteran who will be 31 on July 21.

Still unspoiled, always considerate of others, utterly modest, Gene Littler in the 61st USGA Open had the spotlight thrown full on not only his ability to control a golf ball but also on the fine character which has always distinguished him. The game is fortunate to have such a gentleman as its Champion Golfer.

Gene Littler typifies the modern young man who has found his niche in playing competitive golf as a professional. The pattern is simple:—junior golf, college, military service, major amateur competition, then the professional circuit when wide travel as an amateur became financially difficult.

Littler has long been tabbed for greatness, as witness:

1947-48-49—finalist in the U. S. Junior Chamber of Commerce Junior Championship, and winner in '48.

1953—National Amateur Champion and a star of our Walker Cup Team.

1954—Runner-up in the Open on his first try as a professional, five months after leaving amateur golf.

Winning the Open last month at Oakland Hills Country Club, near Detroit, was a natural sequel for Gene Littler, although long deferred.

But Littler's early promise was gauged not so much by his winnings as by the quality of his swing. His style has long been smooth, uncomplicated, classic. His putting is a thing of beauty. As Champion, he will be a model to try to copy.

"Gene the Machine" turned professional in January, 1954, some four months after winning the National Amateur. The



Gene Littler

letter he wrote the USGA then is worth recalling:

"I am taking this action after many weeks of deliberation, despite the fact my father and many of my closest friends would like to see me remain an amateur.

"To remain an amateur I would be compelled to accept financial assistance from outside sources, which is contrary to the rules governing amateurs. Neither my parents nor myself have the financial means to continually pay my expenses for amateur tournaments . . .

"I hope to be a credit to the game of golf and will do everything possible to uphold this fine sport."

Less than five months later he came to the home hole at Baltusrol, in New Jersey, needing an eight-foot putt to tie Ed Furgol for the Open Championship. He had to wait until last month at Oakland Hills to come all the way through.

In between, Gene was a very successful tournament campaigner, though there were lean times when he had small temptations to quit the tour "in a way, but not seriously—I was too stubborn," he says. "Now I can appreciate it more."

Littler has never smoked or drunk alcoholic beverages. His little family has been on the tour with him until this year, when 7-year-old Curt started school. The Littlers have another child, Suzanne, 3. Gene met his wife, Shirley, when both were students at San Diego State College in his native California.

With his modesty, Littler has a natural friendliness and a delightfully dry sense of humor. He says he doesn't like "all the glory, hand-shaking and general run of things after a tournament." After a round, he likes to refrain from talking golf. "When I play a great round, I feel I have really accomplished something. Golf is the only game where you feel you did it alone."

It was characteristic that he did not know the amount of first prize money in the Open until he accepted a \$14,000 check from John G. Clock, USGA President, who has known Littler from boyhood.

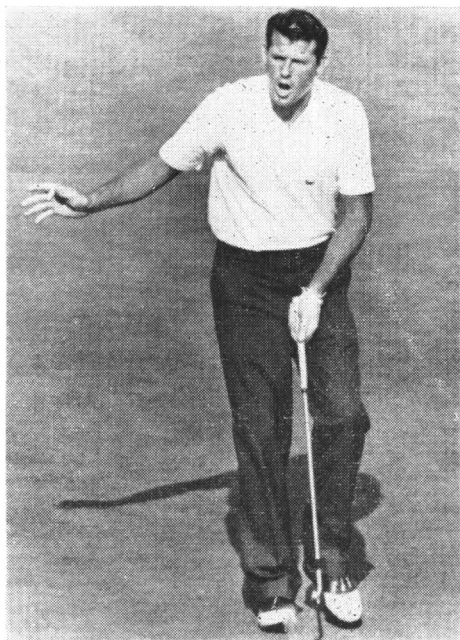
Select Company

In the first 59 Open Championships, six of the winners had won or were to win the Amateur Championship also—Francis Ouimet, Jerry Travers, Chick Evans, Bob Jones, Johnny Goodman and Lawson Little. Now the tempo has increased—Arnold Palmer last year, and now Gene Littler. This is select company. The new Champion graces it well.

Oakland Hills' fourth Open was a tremendous competition. Starting the fourth round, there were 13 contenders whose scores ranged from 210 through 214. It was anybody's tournament. Doug Sanders was the leader at 210; Littler had 213.

Amateur Jack Nicklaus set up a 72-hole score of 284, and a few minutes later Mike Souchak matched it. Then Bob Goalby came in with 282. By that time, things had shaken down to the point where the other contenders seemed limited to Littler and Sanders.

Suddenly, for the first time in the Championship, Littler was ahead. He had fourteen pars and three birdies up to the final hole, which he did in 5, one over



Doug Sanders

par. His 68 gave him a grand total of 281, one more than par.

Sanders bravely tried to match it. In a dramatic moment at the 18th, he chipped his third from just off the front of the putting green and saw the ball miss the left side of the hole by a scant two inches. His 282 tied him with the brilliant Goalby for second.

Nicklaus and Souchak followed at 284. Last year Nicklaus had been runner-up to Arnold Palmer. In the last three years Souchak has tied twice for third and once for fourth. He and Sanders were ailing physically at Oakland Hills.

Littler was the only player in the field who twice broke par, with his rounds of 73-68-72-68—281. He had ten birdies. Of the eleven strokes he lost to par, seven were dropped at the tenth and the 18th holes.

Oakland Hills was a less stringent test than in 1951, when Ben Hogan won with 287, but it was a great test and an eminently fair one. It left little room for slips, and the ridges and depressions of its greens put a high premium on "contour putting." Unlike 1951, when most of the rough was well trampled by spectators, this time the gallery was kept

well back from playing areas by the USGA's system of roping every hole as a unit; thus, the testing qualities of the course were preserved almost intact, except when a ball was splattered beyond the ropes onto trampled grass.

The weather conduced to scoring except for a strong wind the first day. It was always fair and sunny. The first day there was one score below par, a 69 by Bobby Brue. Thereafter the wind died down, the players found the range, and 18 sub par rounds all told were holed. The lowest were 67s by Bob Rosburg, Bob Harris, Doug Sanders, Eric Monti and Jacky Cupit. There were three 68s and ten 69s.

One of the best criteria of a Championship course is the number of clubs it tests. Littler used every club in the bag —“and more than once,” he said.

Oakland Hills is wonderfully suited to big golf, not only as a test but also because of its facilities. There are wide open spaces for galleries between holes.

The clubhouse is unusually commodious. The Club's North Hills course, directly across a public highway, provides parking space.

With a wonderful field and all these physical features of Oakland Hills, the Open this year attracted record galleries which were estimated as follows, based on constant gate counts kept by a private police agency (*indicates new record):

Thursday	12,311
Friday	15,225* (old record 14,751)
Saturday	20,439* (old record 16,527)

Total 47,975* (old record 43,823)

There was a record entry of 2,476, who were reduced to a starting field of 150 by a double series of qualifying—58 local qualifying rounds and 13 Sectional Qualifying Championships.

For the first time there were no withdrawals from the original qualifying field.

Total prize money for professionals in the Championship proper was \$60,500. In each Sectional event, awards of \$300,

Littler's final putt at Oakland Hills is seen



\$200 and \$100 were made to first, second and third professionals. Thus, there was total prize money of \$7,800 in the Sectional Championships which, added to the prizes in the Championship proper, made a grand total of \$68,300—a record prize fund.

The Open is distinctive in many ways but its most meaningful quality is that it is the one true National Championship. Here alone may any professional or any amateur handicapped not over 2 have his opportunity. Here the touring professionals compete with their brethren the club pros and the leading amateurs.

At Oakland Hills, there were 22 club pros and amateurs in the field of 57 who qualified for the Saturday's 36-hole wind-up. Two of the amateurs, Jack Nicklaus, aged 21, and Deane Beman, the 23-year-old Amateur Champion, finished among the first 12. Nicklaus, after an opening 75, played wonderfully with 69-70-70 for his 284.

A surge of youth came about this year.

Nine young men in their twenties were among the lowest 24 scorers, including Jacky Cupit, a convert from amateurism last fall, whose third-round 67 included six 3s, four of them for consecutive birdies; Allen Geiberger and Bobby Brue, the first-round leader.

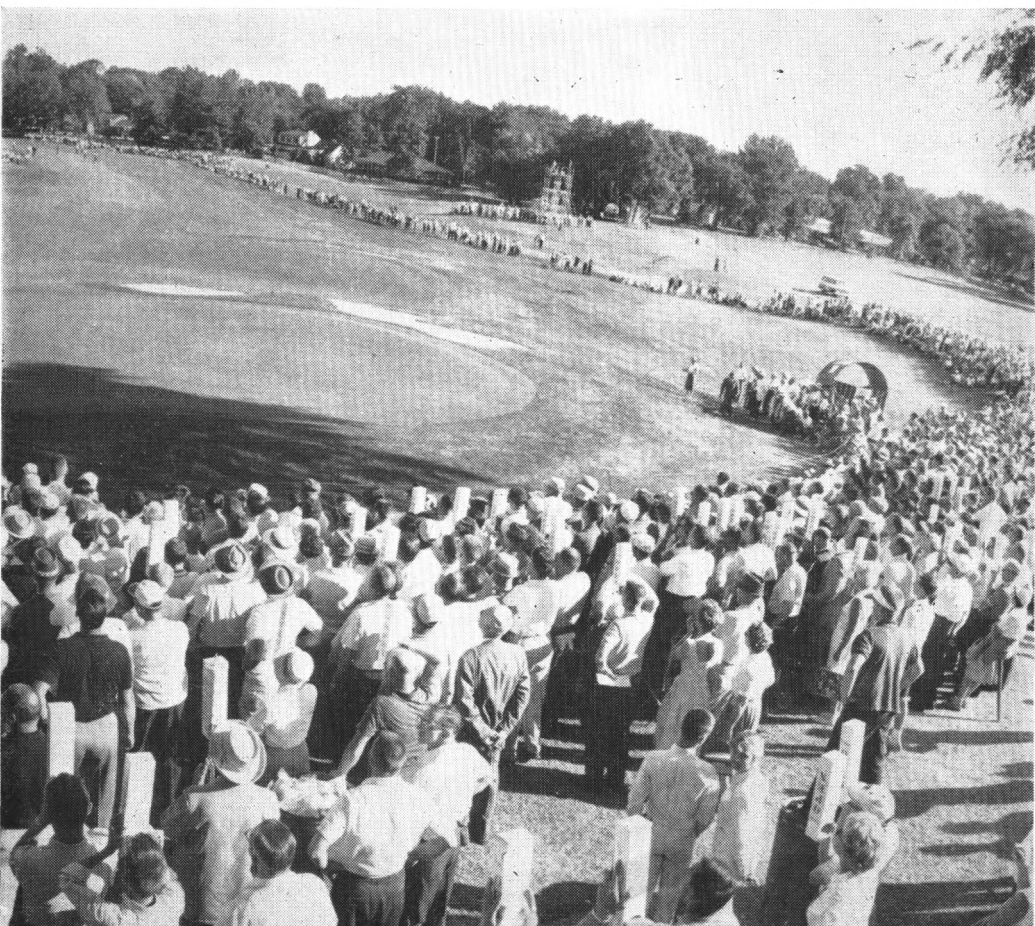
And what of some of the warmest favorites?

The defending Champion, Arnold Palmer, had a woeful start and barely qualified with 149. Then he holed two grand par 70s on Saturday, including a 32 on the hard second nine, finishing eight strokes away from Littler with 289. Palmer's many business interests doubtless have diverted his attention from his prime business of playing golf. He was a most worthy and most becoming Champion throughout the last year.

Then there was Gary Player, the little South African, who said he never played better golf from tee to green. He, too, scored wonderfully Saturday with 69-71, but his total of 287 tied for ninth.

by most of the record Open Gallery of 20,439.

photo by Rolly Ransom, Detroit News





Bob Goalby sinks a putt during the first round of the Open. He and Doug Sanders tied for second place with 72-hole scores of 282.

Ben Hogan was a sentimental favorite over the course where he had gained one of his greatest victories ten years before. This time he was 71-72-73-73—289. Not since 1939 had he failed to finish in the first ten (except when sickness prevented him from starting in 1949 and 1957).

Sam Snead, another who always attracts crowds, flew into this Open on the wings of a remarkable record in the spring when he seemed to be at the crest of his powers. But he took one stroke more than Hogan.

The tournament was graced by the British Open Champion, Kel Nagle, of Australia, who did valiantly for awhile with a pair of 71s, then had two 74s for 290. Jay Hebert, the PGA Champion, just could not get his good game going. Bob Rosburg, after sharing the 36-hole lead with Sanders at 139, was unable to hold the pace.

Among those who failed to make the cut at 149 were Cary Middlecoff, twice Champion; Julius Boros, Walter Burkemo, Peter Thomson, Bill Collins, Don

HOW THE LEADERS STOOD AFTER EACH ROUND:

18 HOLES

Bobby Brue	69
Tommy Bolt	70
Bob Goalby	70
Paul Harney	71
Ben Hogan	71
Allen Geiberger	71
Bruce Crampton	71
Marty Furgol	71
Rex Baxter, Jr.	71
Kel Nagle	71

36 HOLES

Bob Rosburg	139
Doug Sanders	139
Doug Ford	141
Allen Geiberger	141
Eric Monti	141
Gene Littler	141
Bobby Brue	141
Gardner Dickinson, Jr.	141
Bob Harris	142
Kel Nagle	142
Bruce Crampton	142
Bob Goalby	142

54 HOLES

Doug Sanders	210
Jacky Cupit	211
Mike Souchak	211
Bob Goalby	211
Gardner Dickinson, Jr.	212
Doug Ford	212
Eric Monti	213
Bob Rosburg	213
Gene Littler	213
*Jack Nicklaus	214
Allen Geiberger	214
Bobby Brue	214
Dow Finsterwald	214

72 HOLES

Gene Littler	281
Bob Goalby	282
Doug Sanders	282
*Jack Nicklaus	284
Mike Souchak	284
Dow Finsterwald	286
Doug Ford	286
Eric Monti	286
Jacky Cupit	287
Gardner Dickinson, Jr.	287
Gary Player	287
* Amateur	

Fairfield, Johnny Pott, Fred Hawkins and Ernie Vossler. Ken Venturi did not qualify in the Sectional tryouts. Amateur Charles Coe did not file entry.

Oakland Hills has always been a gracious, efficient host and, tested by this best-attended of Opens, the Club's committees and staff met the challenge. It should be appreciated that a big tournament cannot be staged successfully unless amateur golfers voluntarily give thousands upon thousands of man-hours to the work.

Little's hole-by-hole scores, with par:

Par	4 5 3 4 4 4 4 4 3—35	4 4 5 3 4 4 4 3 4—35—70
1st	5 5 3 5 4 3 4 4 3—36	5 5 4 3 4 4 4 3 5—37—73
2nd	5 4 2 4 4 3 4 4 3—33	5 4 4 3 4 4 4 3 4—35—68—141
3rd	4 5 3 4 4 4 4 4 2—34	6 4 5 3 4 4 4 3 5—38—72—213
4th	4 5 3 4 4 4 3 4 3—34	4 3 5 2 4 4 4 3 5—34—68—281

Oakland Hills was especially fortunate in having Judge John P. O'Hara for its General Chairman. This was his third Open as a leading force—in 1937 he was the Club's President and in 1951 he was General Chairman.

The USGA records its grateful appreciation of the hospitality and the labors of all of Oakland Hills' good people, from Joseph Carey, President, to the newest member of the staff so ably directed by Manager Clyde Cyphers.

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. Booklet 25 cents (special rates for quantity orders, more than 500).

USGA GOLF HANDICAP SYSTEM FOR MEN, containing recommendations for computing USGA Handicap and for rating courses. Booklet 25 cents. USGA Slide Rule Handicapper 25 cents. Poster 15 cents.

THE CONDUCT OF WOMEN'S GOLF, containing suggestions for guidance in the conduct of women's golf in clubs and associations, including tournament procedure, handicapping and course rating. 35 cents. USGA Slide Rule Handicapper 25 cents. Poster 15 cents.

USGA HANDICAP RECORD FORM, revised in 1961, provides for the listing of 75 scores. It is designed for ease in determining the last 25 differentials from which to select the lowest 10 when more than 25 scores are posted. \$3 for 100.

A GUIDE FOR GREEN COMMITTEE MEMBERS OF GOLF CLUBS, a 16-page booklet compiled by William H. Bengueyfield from correspondence, articles and speeches by Green Committee Chairmen, Golf Course Superintendents and USGA officials. 25 cents.

COURSE RATING REPORT, a form for rating a course hole by hole; for association use, size 4¼ x 7 inches. 10 cents, \$7.50 per 100.

COURSE RATING POSTER for certifying hole by hole ratings to a club; for association use, size 8½ x 11 inches. 5 cents. \$3.50 per 100.

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.

TOURNAMENTS FOR YOUR CLUB, a reprint of a USGA Journal article detailing various types of competitions. No charge.

PREPARING THE COURSE FOR A COMPETITION, a reprint of a USGA Journal article. No charge.

COSTLY FIRES IN GOLF CLUB PROPERTIES, reprint of a USGA Journal article by T. Seddon Duke. No charge.

THE RULE ABOUT OBSTRUCTIONS, a reprint of a USGA Journal article by Joseph C. Dey, Jr. No charge.

PROTECTION OF PERSONS AGAINST LIGHTNING ON GOLF COURSES, a poster. No charge.

HOLE-IN-ONE Awards. No charge.

LETTER AND SPIRIT OF THE AMATEUR CODE, a reprint of a USGA Journal article by Joseph C. Dey, Jr. No charge.

GAMBLING IN GOLF TOURNAMENTS, a reprint of a USGA Journal article by Richard S. Tufts. No charge.

WORK OF A CLUB GREEN COMMITTEE, a reprint of panel discussions conducted by the USGA Green Section Committee. No charge.

HOW TO MEET RISING COSTS OF GOLF COURSE MAINTENANCE, PARTS I & II, reprints of panel discussions conducted by the USGA Green Section Committee. No charge.

WATER USE ON THE GOLF COURSE, a reprint of talks delivered at the 1960 Educational Program conducted by the USGA Green Section Committee. No charge.

MISTER CHAIRMAN, a reprint of a USGA Journal article outlining the duties of the Chairman of the Green Committee. No charge.

ARE YOU A SLOW PLAYER? ARE YOU SURE? A reprint of a USGA Journal article by John D. Ames. No charge.

A JUNIOR GOLF PROGRAM FOR YOUR CLUB AND DISTRICT, a 16-page booklet on organizing and developing junior golf programs at different levels by the USGA Junior Championship Committee. No charge.

USGA JOURNAL AND TURF MANAGEMENT, a 33-page magazine published seven times a year. \$2 a year.

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

THE UNDERSIZE GOLF BALL

A DANGER TO THE GAME

By
CLARENCE W. BENEDICT,
Chairman,
USGA Implements
and Ball Committee

For the good of the game, all golfers are urged to use only balls which conform to the USGA Rule of a diameter not less than 1.680 inches.

Some golfers have been using the British size ball of lesser diameter (1.620 inches minimum). Further, some American manufacturers have been producing balls slightly under the USGA minimum.

Failure to use the USGA standard size ball is a violation of the Rules of Golf, and the penalty is disqualification.

Thus, scores are not acceptable for handicapping if any ball not meeting USGA specifications is played.

Use of a small ball is unsportsmanlike. It can engender disrespect for the Rules. If unchecked, it could lead to distortion

of the playing values of American courses—and it would be costly, if not impossible, to lengthen courses or to recover the former relation between ball and course.

The USGA urges clubs to bring these facts to the attention of their members, and to see that their professionals sell only merchandise which conforms with USGA Rules.

USGA Tests

A substantial number of American balls of the following brands tested by the USGA in the spring did not conform with Rule 2-3 of the Rules of Golf for the reasons indicated; it is expected that subsequent tests this year will reveal that the deficiencies of a number of these balls have been corrected:

Brand	Reason
(1) U. S. Royal Special L/P	... Diameter less than 1.680 inches.
(2) PGA Ryder Cup 90	... Diameter less than 1.680 inches.
(3) PGA Ryder Cup 100	... Diameter less than 1.680 inches.
(4) MacGregor DX Tourney	... Weight more than 1.620 ounces.
(5) Ben Hogan	... Diameter less than 1.680 inches.
(6) Ben Hogan 90 plus	... Diameter less than 1.680 inches.
	... Weight more than 1.620 ounces.
(7) Sweetshot Dyna 90 Matic	... Diameter less than 1.680 inches.
(8) Golfcraft Staff	... Diameter less than 1.680 inches.
(9) Electra	... Weight more than 1.620 ounces.

Use of such balls (Nos. 1 through 9) is prohibited under USGA Rules except that any individual ball of the above brands may be used if it can be proved to meet the specifications or if the player presents written certification of a responsible testing authority to that effect. Responsible testing authorities include golf ball manufacturers.

(10) Acushnet Titleist DT 100 ... Does not meet velocity test.

Use of this ball (No. 10) is prohibited under USGA Rules, as it cannot be tested except by the USGA apparatus in New York.

British Trying American Size Ball

British golfers have been asked by their golf governing body to try the

American size ball, which is legal under British Rules. Following is an announcement by the Royal and Ancient Golf Club of St. Andrews, Scotland:

"The Rules of Golf Committee have been considering the problem of the golf ball and are unanimously of the opinion that golfers of all standards would find the game more enjoyable if played with the larger, or 1.68", ball.

"Before making any proposal for a change they hope that all golfers will give this larger ball a fair and conclusive trial, so that the Committee may receive a general consensus of opinion on the problem.

"Accordingly, through the National Golf Unions and other representative bodies, they are asking Golf Clubs and golfers to try the ball for a reasonable period and to arrange competitions with it.

"The Golf Ball Manufacturers in this country are pleased to cooperate in this experiment, so far as their present production permits: they believe that supplies will be sufficient to meet reasonable demands.

"The Committee hope that by the end of this year they will have the benefit of the views of golfers, who have given it a serious trial, to assist them in deciding any future action."

Golf as a Religion

Golf is a religion, a way of life itself that is one with Art and Science and Song and Hope and Memory and Joy and Suffering.

Study its rules for character and fair play and the penalties accrued for one who does not conform to decency on a field of honor.

Our complete surrender to Golf seems to be a demonstration that happiness and goodness may be attained by making the most of this in the only world we know, by cultivating our senses until they reach out and apprehend in almost tangible form the unseen spirit of the game.

J. Martin Watson
Boise, Idaho

USGA FILM LIBRARY

"Second World Amateur Team Championship for Eisenhower Trophy" is a 17 minute film in full color of the competition at the Merion GC last fall which was won by the United States team. Ex-President Eisenhower is shown receiving the American and the Australian teams at the White House.

"Famous Golf Courses: Scotland," is an 18-minute film in full color. Famous holes were photographed at Troon, Prestwick, Carnoustie, St. Andrews, North Berwick and Muirfield.

"Walker Cup Highlights," is a 16-minute film tracing the early history and play for the first international golf trophy. Bob Jones, Francis Ouimet and other Walker Cup stars are shown. The latter half of the film is in color.

"St. Andrews, Cradle Of Golf," is a 14-minute, full color, 16mm travelogue of historic St. Andrews, Scotland, its Old Course and the Royal and Ancient Golf Club clubhouse.

"First World Amateur Team Championship for Eisenhower Trophy," is a 14-minute, full color, 16mm film of the first World Amateur Team Championship at St. Andrews. Twenty-nine countries compete for the Eisenhower Trophy.

"On the Green," a 17-minute, full color, 16mm presentation filmed at the Mid-Ocean Club, Bermuda, illustrates correct procedures under the Rules of Golf governing situations arising on the putting green.

"Golf's Longest Hour," a 16mm full color production of 17½ minutes, depicts closing stages of the 1956 Open Championship. Filmed at the beautiful Oak Hill Country Club, Rochester, N.Y., it shows the eventual winner, Cary Middlecoff, set a target at which Ben Hogan, Julius Boros and Ted Kroll strive in vain to beat.

"Play Them As They Lie," a 16mm color production of 16½ minutes in which Johnny Farrell, Open Champion of 1928, acts as intermediary between Wilbur Mulligan, a beginner of unimpeachable integrity, and Joshua P. Slive, a past master in the art of breaking the Rules. The film was made at the Baltusrol Golf Club, Springfield, N. J., where Farrell is professional.

"Great Moments in Golf," lets the viewer see the many interesting exhibits in "Golf House," USGA headquarters in New York, and re-live golf triumphs of the past with many of the game's immortals. The film is a 16mm black and white production and runs 28 minutes.

"The Rules of Golf—Etiquette" stresses the importance of etiquette by portrayal of various violations of the code in the course of a family four-ball match. Ben Hogan appears in several scenes, and Robert T. Jones, Jr., makes the introductory statement. A 16mm color production of 17½ minutes.

The distribution of prints is handled by National Educational Films, Inc., 723 7th Ave., New York 19, N. Y., which produced the films in cooperation with the USGA. The rental is \$20 per film; \$35 for two; \$50 for three; \$60 for four and \$70 for five, in combination at the same time, including the cost of shipping prints to the renter.

FOUR NEWCOMERS NAMED TO WALKER CUP TEAM

1961 Match
at Seattle,
September 1 and 2

Six veterans of Walker Cup play and four newcomers to that event have been invited by the USGA to represent the United States in the biennial match with a team of British amateurs September 1 and 2 at the Seattle Golf Club, Seattle, Wash.

The ten American players are (in alphabetical order):

GENE ANDREWS, Beverly Hills, Calif.

DEANE R. BEMAN, Washington, D. C.

DONALD R. CHERRY, New York and
Wichita Falls, Texas

ROBERT E. COCHRAN, St. Louis, Mo.

CHARLES R. COE, Oklahoma City, Okla.

ROBERT W. GARDNER, Spring Lake, N. J.

WILLIAM HYNDMAN, III, Philadelphia,
Pa.

JACK W. NICKLAUS, Columbus, Ohio

CHARLES B. SMITH, Gastonia, N. C.

DR. FRANK M. TAYLOR, JR., Pomona,
Calif.

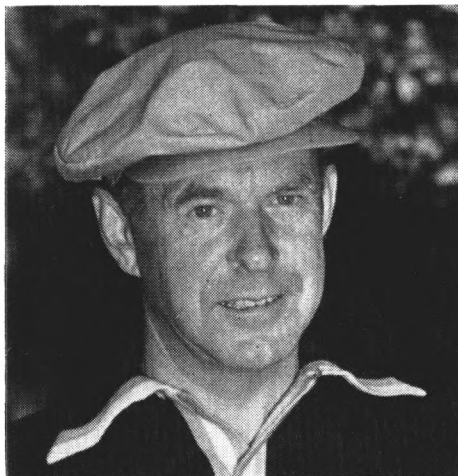
The non-playing Captain is Hon. Jack Westland of Everett, Wash., a member of the House of Representatives. Mr. Westland won the Amateur Championship in 1952 and played on the U. S. Walker Cup teams of 1932, 1934 and 1953.

Walker Cup play will be a new experience for Andrews, Cochran, Gardner and Smith. They are not youths, however, their respective ages being 48, 49, 40 and 30.

Gardner is not without international experience, having been a member of the winning American team in the 1960 World Amateur Team Championship for the Eisenhower Trophy. The other members of that team have been invited to join the Walker Cup group; they are Beman, Hyndman and Nicklaus.

The team includes three former winners of the Amateur Championship: Coe in 1949 and 1958; Nicklaus in 1959; and Beman in 1960. The latter also won the British Amateur Championship in 1959.

Nicklaus was the runner-up in the



Hon. Jack Westland

Open Championship in 1960 and tied for fourth place this year. His 282 score in 1960 is the lowest 72-hole total ever recorded in the Open by an amateur.

The United States is the present holder of the Walker Cup, having defeated the British in 1959 at Muirfield, Scotland, 9 matches to 3. Five members of that winning squad have been re-nominated—Beman, Coe, Hyndman, Nicklaus and Dr. Taylor.

The Walker Cup match consists of four foursomes and eight singles, all at 36 holes.

In the event an original nominee is unable to accept the USGA's invitation, a replacement will be invited from among the following alternates, in the order listed:

First alternate—William J. Patton, Morganton, N. C.; second alternate—E. Harvie Ward, Jr., San Francisco, Calif.; third alternate—Dr. Edgar R. Updegraff, Tucson, Ariz.

WEST VIRGINIA'S "MR. GOLF" NEVER PLAYED A STROKE

By

**WILLIAM C.
CAMPBELL**

Member, USGA
Amateur Status and
Conduct Committee

We golfers of the Mountain State are having to adjust this year to the end of an era. After 27 years as Secretary-Treasurer of the West Virginia Golf Association, Mr. Robert James Foley has stepped down. But Uncle Bob is far from being out of golf—even though he has yet to play a stroke himself.

Mr. Foley took over the responsibility of West Virginia golf in the depths of the Depression. He replenished the State Association's empty bank account with his own money, and established what became a familiar pattern of iron-gloved direction of Association affairs—tempered by a warmth of human feeling that his cloak of gruffness could not hide. Several presidents served during Mr. Foley's tenure—all good and able men dedicated to golf, and incidentally all of them players of the game—but none would deny that Mr. Foley "ran things."

Even before, he had promoted the game in various ways. His advice (always free) was essential in the development of several of the Tri-State's early courses and has been sought ever since, because of his extensive professional knowledge of grasses; he is head of the Foley Horticultural Service. He has always given freely of his time and knowledge out of some strangely acquired love of golf. Administrative responsibilities followed naturally; in all of the activities in which he joins his fellow men, he has been the perfect one-man organization.

In 1924 he was elected Secretary-Treasurer of the Guyan Golf and Country Club in his home town of Huntington. The Board of Directors abolished all committees and put everything in his hands. The results were so successful that he didn't shed that burden for 16 years.

Meanwhile Mr. Foley had become affiliated with the USGA—or vice versa, as West Virginians are inclined to view the relationship. In 1936 he became a member of the Green Section, and still is; in '37 he conducted the USGA Open Sec-



Robert J. Foley

tional Qualifying Rounds on the Guyan course (which the young Sam Snead won, with an 8-under par score, to lead the nation); and in '42 he officially joined the Sectional Affairs Committee on which he still serves. USGA club memberships in this area have multiplied five-fold during his tenure.

Mr. Foley has attended a number of National championships and for years never missed an Annual Meeting of the USGA. He may not have volunteered much information or opinion publicly, the only exception being his constant refusal to enforce the stymie in his domain. His attitude was generally expressed by the reply which he reportedly gave to a USGA official inviting his comments: "You fellows adopt the rules, I'll enforce them." Mr. Foley has never lacked the courage of USGA convictions.

Our course superintendents know him through his wise and generous help with

their green and turf problems (in addition to helping to build new courses and rebuild old ones, he personally introduced bent grass to West Virginia); but area golfers have known him more for a loyal and unique service to the USGA, for his efficient conduct of the various (Open, Amateur, and Junior Amateur) Sectional Qualifying Rounds, and for his strict, unwavering enforcement of the Rules of Golf and Amateur Status.

Service Without Play

For years he invited all entrants to breakfast before the qualifying rounds, in order to explain rules, etc. and to get everyone acquainted. In later years, this hospitality has taken the generous form of refreshments for all players (and, only too often, spectators) after the scores are posted. Thus we know Mr. Foley as a stern and gracious supporter of the game which he serves lovingly and self-effacingly but does not play.

As "Mr. Golf" in West Virginia and much of the neighboring Kentucky and Ohio, he has deserved the plaudits of all, but long ago was resigned to handling the gripes on which golfers seem to thrive. So he may have been as privately pleased as he was publicly annoyed three years ago when his club made him an Honorary Life Member and adopted this Resolution:

"Wishing to honor in a singular manner the unselfish service of Mr. R. J. Foley, the Board of Trustees of Guyan Golf and Country Club hereby establish the R. J. Foley Seniors Invitational Handicap Golf Tournament for players of 50 years of age or more. The Board of Trustees are fully cognizant of the fact that the membership of Guyan Golf and Country Club can never fully repay Mr. Foley for his devoted and unselfish efforts on behalf of the Club, but do hope that on the second Saturday of each May, down through the years, this Tournament will serve to recall to our attention his outstanding contributions."

Mr. Foley's organizational talents could hardly be confined to golf, but the extent of his extra-curricular interests is appalling. From 1918 to 1960 he was Sec-

retary of the community's leading dancing club, without ever dancing a step himself; he remains the only secretary-treasurer (there are no other officers) of the town's leading men's luncheon club, which also features games of chance which he personally doesn't try; he has long been secretary of the Cabell County T. B. Association; and, since it began years ago, Assistant Treasurer of the Huntington Junior League!

As with many men of dignity and pride, the best measure of this man may be his interest in people, especially children. Though he and Mrs. Foley are childless, he has attracted successive generations of children, who sense instinctively the warmth and humor behind the severe exterior which he shows to the world. His den is crowded with pictures of nieces, nephews, and assorted young friends who have known and loved him and rejoiced in his visits—all within walking distance, for naturally he never learned to drive a car—and none of his countless favorites would think of a church wedding without asking Uncle Bob to be Master of Ceremonies.

In this man the USGA indeed has a rare gem in its devoted service. But it has no monopoly on his abiding interest, dedicated loyalty, and fierce honesty. Typical may be this tribute which he received from the grateful men of Ritter Park Croquet Club, who practice their art opposite the Foley residence:

"In recognition of his interest in the activities of our Club and as a mark of appreciation for his generosity in furnishing us with very necessary equipment for maintaining our playing field, we the undersigned do hereby enroll Mr. R. J. Foley as an Honorary Life Member in our Club, with unlimited privileges which include heckling, coaching, razzing, kibitzing, or whatever he may choose to do."

Needless to say, Uncle Bob has never played croquet either.

All publishing and other rights—after the USGA JOURNAL—are hereby reserved.

DUTIES OF OFFICIALS UNDER THE RULES OF GOLF

A guide for
referees and
Committee members

Unlike many sports, golf is seldom played with referees. Consequently, the opportunity for officiating in that capacity is limited, and few golfers are fully qualified to serve as referees. This outline has been written with the hope of assisting those who may be called upon to officiate.

Since the principal duty of a referee is to determine questions both of fact and of golfing law (Definition 26), the manner in which he performs his duties can have a substantial effect on the results of a match. It is not sufficient that he render a correct decision when appealed to; he must also, at all times, be sufficiently alert to observe accurately and to interpret correctly all the events which may occur during a round. Golf being a perverse game, the careless referee can be certain that that moment when his attention is relaxed will be the same moment when some difficulty will arise.

Further, there is the delicate little matter of the manner in which a referee performs his duties to observe and to interpret. Golf is sometimes played under considerable nervous tension, and maintenance of a proper degree of concentration is important. Brusque or officious handling of a situation can, by upsetting a player, magnify the effect of a penalty far beyond the penalty itself. It is important to sense when to talk to a player and when to be silent.

Obviously, a referee must understand thoroughly what he is doing. He is assigned to a match for the purpose of helping to ensure that it will be fairly played under sporting conditions.

Let us start on the first tee and consider problems that may confront a referee during match play. (The special problems of refereeing in stroke play will be considered later.)

Before Play Starts

The procedure of a referee before a match will depend a great deal on the

experience of the players. If both are seasoned veterans who have often played before large galleries and in matches with referees, it is usually sufficient to ask each player to identify the ball he will be using and whether he has counted his clubs; the referee should note the brand of ball of each player. If the players are inexperienced, it is well to remind them of the duties of a referee, principally that he has not been assigned just to call penalties but rather to be of assistance to the players, and that they should call on him whenever they may be doubtful as to the correct procedure. When players are not accustomed to playing before a gallery, especially a large gallery, it is well to ask them to call upon the referee whenever the actions of the gallery may disturb them.

Identification of the player's ball can become very important and the referee should not depend wholly upon the player to decide this question of fact. There should be no chance for confusion either between the balls in the match or with a ball outside the match. One of the most important times to guard against confusion is when a player puts a second ball in play under the Rules: the referee should always ask whether the player will be able to identify the two balls. There should be no difficulty in obtaining the cooperation of players since a ball which a player is unable to identify becomes a lost ball (Definition 6).

The Observer

Another matter requiring the referee's attention before a match is to reach an understanding with his observer (Definition 19), if one has been appointed. Usually it is best for the observer to work ahead of the match as much as possible. The referee should stay close to the players at all times; he should be readily available to answer questions and to check on such matters as the purpose for which a second ball may be played.

By stationing himself usually in the

area where the ball may be expected to come to rest, an observer will be in a position to determine important questions of fact which the referee, from his position near the players, could not hope to decide. For example, it is always useful to know before going forward whether a player's ball is out of bounds or in a water hazard. Only an official can properly determine such facts. (On a close question of out of bounds, it can be helpful to stretch a tape measure, string or gallery rope between posts or stakes, on their inside faces near the ground.) There is the very important question of knowing whether a ball was still in motion when deflected by some such outside agency as a spectator (Rule 26-1a) or whether it had come to rest and was moved by an outside agency (Rule 27-1a). If it was moved when at rest, there is the further question of knowing the spot from which it was moved.

Since the play of each ball should be observed, when both players are in difficulty on opposite sides of the hole it is desirable for the observer to station himself by one of the balls if possible. Preferably, he should watch the ball to be played first, so that he may have opportunity to resume his normal position ahead of the play.

When there is a large gallery, there are other duties which an observer can perform by placing himself ahead of the play. To help ensure fair play, it is a duty of a referee to guard against any possible interference by spectators. Such interference occurs most frequently around the putting green. An observer can be of great assistance by moving spectators away from places where a ball may go, asking spectators to stand up and be alert before shots are played to the green, and in guarding a ball which may have gone into the gallery. Very often an observer is in a better position than the referee to work with the marshals to obtain proper control of the gallery.

In an important match, the services of an alert observer are indispensable to the referee.

On the Tee

When play starts and on each tee thereafter, the referee should station himself in a position to determine whether players have teed within the

limits of the teeing ground. Should an opponent require the player to replay, and the claim be disputed, it would create a difficult situation for the referee if he did not know whether the ball had been properly teed. Although a referee cannot initially instruct a player to play from within the limits of the teeing ground, there is no reason for him to watch a player tee and play his ball from outside the limits without giving him some such warning as "Your ball is a little ahead of the markers."

This brings up the question of the referee's ethical position when he sees a player about to commit an infraction of the Rules. As has been said, a referee is assigned to a match for the purpose of ensuring that it will be fairly played under sporting conditions. The referee does not have the authority to prevent a willful violation of the Rules. But he certainly does have both the right and the obligation to advise the players with respect to the Rules. To be sure, ignorance of the Rules is no excuse, and it may be argued that the player who does not know the Rules should be penalized; but it would be contrary to the spirit of fair play which pervades golf should a referee fail to inform a player of his rights and obligations under the Rules, and then to call a penalty for a violation he could have prevented. The referee who tries to help players avoid infractions cannot be accused of favoring one player as against the other since he is still performing his duties impartially.

The following are a few of many examples of situations and the suggested procedure to which this policy might be applied:

- (a) Lifting a loose impediment in a hazard: The referee should advise the player that his ball is in a hazard.
- (b) Improper dropping procedure: The referee should call attention to what the player is doing wrong.
- (c) Play of a second ball without stating the purpose: The referee should ask whether it is the player's intention to play the ball provisionally.
- (d) Incorrect order of play in four-somes: The referee should ask whether the player is playing in correct order.



A tape helps former USGA officials Charles B. Grace (left) and Isaac B. Grainger.

One final suggestion for tee procedure. If the gallery is out of position ahead of play or if there is noise or movement which might disturb the players, the referee should stand between the player's ball and the hole. This will serve to stop play until satisfactory conditions have been restored and will place the referee in a good position to command the attention of the marshals and galleries for the purpose of giving them any necessary instructions. (On the putting green, if it is not practical for the referee to take such a position, he should speak first to the player who is about to play, warning him of his intention to speak to the gallery.) Generally speaking, it is a duty of the referee to help prevent any interference with play by the gallery, and he should not hesitate to stop play and address the gallery whenever they are disturbing the players or in the event of an exhibition of undue partiality.

Who Is Away?

Play having left the tee, the referee should proceed to a position between the two balls, arriving there ahead of the players in order to save time by deciding which ball is away before they are ready to play. There are many methods of deciding which ball is away: One of

the simplest is to approach the two balls on a line to the hole midway between both balls. If there still is any doubt and the referee is equipped with a shooting stick or an umbrella, he should stand between the balls and hold the stick or umbrella perpendicular to the line to the hole, and the direction in which the implement points will usually indicate that one ball is ahead of the other.

Around the putting green, the order of play can be of great interest to the players. Again, to avoid delay, the referee should arrive at the green ahead of the players, and if there is any doubt he should proceed at once to the hole to see who is away. If the matter cannot be determined visually, the distance to each ball should be paced off. To resolve any further doubt, the referee should be equipped with a 50-foot tape for accurate measurement. For short distances the flagstick may be used but there is less danger of doing damage to the putting surface by the use of a tape. In any case, measurement should, if possible, be made just to one side of the line of the player's putt.

Whenever it is impractical to decide which ball is away anywhere on the course, the matter should be determined by the tossing of a coin.

In Position To See Ball Played

After the tee shot, one of the very important questions of fact that can arise to confront a referee is whether a ball has been moved by the player. To determine this, the referee (or his observer) should always be in a position to obtain a clear view of the ball, before and after address. Golf being the kind of game it is, a referee is not likely to have occasion to call a penalty, but he may very well have opportunity of protecting the player by determining that his ball had merely oscillated and returned to its original position. In such a case, the referee will have served the interests of fair play by his alertness.

Improving the Lie

The application of Rule 17 always presents a difficult problem for the referee. If a player has improved his lie by smoothing out irregularities, as in sandy soil, or by moving anything such as grass, the referee has no choice and must call a penalty. It should be noted that many of the prohibitions in Rule 17 apply not only before address but also during the address and the backward movement of the club for the stroke, which is not a part of the stroke itself (Definition 30). Thus, the scraping away of sand as the club is moved back for the stroke can constitute a violation.

Occasionally a player may be careless in his observance of this Rule. If there has been no actual violation, the wise referee will caution the player and so minimize the possibility of having to call an infraction later. The referee can accomplish this by pointing out to the player that although no violation has occurred, he wants to assure himself that the player is familiar with the Rule. There are other situations in which the referee may not wish or may not have opportunity to caution a player during play but, as a matter of protection, he may wish to do so later. Obviously, this procedure can be followed only when it is the judgment of the referee that no infraction has taken place.

Rule 17-3 can create another headache for the referee when the ball has found its way into bushes or small trees. Here the referee must determine how much the player may disturb the interfering growth in the process of fairly taking his stance to play the stroke. Generally

speaking, the referee can be guided by the principle that anything occupying the space in which the player wishes to stand may be moved to one side but not stepped upon or moved more than necessary for the player to take his position. The referee will, of course, watch the player and guide him in his actions.

In A Bunker

Another unhappy moment for the referee occurs when he must decide whether a player has touched the surface of the ground in playing from a bunker. It is difficult to inflict a penalty when the contact with the soil has been so slight that the player could not have gained any advantage. However, Rule 33-1 is specific in stating that the ground must not be touched. If the referee observes a few grains of sand fall from the top of a sandy ridge in the bunker, he may assume that it was caused by the motion of the air and not the club; but if the backward movement of the club leaves any mark upon the ground, it must be clear that a violation has occurred.

On the Putting Green

On reaching the putting green, the referee should select a position from which he can watch the play without interference to the gallery. Though the referee's presence on the putting green is essential, the gallery does not always appreciate this fact and resents his being in the way.

More decisions are apt to be required on the putting green than on other parts of the course. If a ball has been displaced, the referee should locate the spot from which it has been moved. When a ball is lifted for interference with play, the referee should assure himself that it is correctly replaced. A possible difficulty here is the player's failure to measure over from a mark placed to one side of the location of the ball. When a ball mark is repaired by a player, the referee should be sure that it is a ball mark and that the repair does not extend beyond the damage made by the impact. The referee must watch to see that players do not touch the line of their putt except for the removal of loose impediments or to repair ball marks. When a ball stops on the lip of the cup, the referee may have to decide, first, whether it has come to rest, and second,

what constitutes a momentary delay before the players are called upon to resume play.

One especially difficult situation on the putting green relates to the concession of putts. Important matches have been lost when a player, after missing a putt for a win, removes his ball from near the hole without holing out and without concession by the opponent. In such a case the referee should make certain whether the putt has been conceded or not. Unfortunately, players seem to enter into a conspiracy to maintain secrecy on this matter of concession. But it is a point which the referee cannot ignore. If he is certain that a putt has not been conceded, rather than calling a penalty at once the referee can bring the matter to the attention of both players by asking the opponent if it had been his intention to concede the putt.

Handling Awkward Situations

Sooner or later every referee is certain to be faced with an awkward situation. Aside from the use of tact and good judgment, there is no formula which he can follow. However, a few suggestions may be helpful.

In the first place, be firm and positive but take plenty of time. It is always well to consult your Rule book. A referee without pants is better equipped than a referee without a Rule book. Even if you are certain of the Rule, it will help to let the players read it. Frequently in reaching a decision, the intention of the player can be of first importance. Before any discussion can develop, the first order of business often should be the determination of this fact. To inquire about the player's intention can be very useful as a routine approach to any questionable action, as, for example, if the player should appear to test the depth of sand in a bunker or to touch the line of his putt when there are no visible loose impediments to be removed.

Finally, there are the difficult questions of fact raised by casual water and interference by an obstruction. To be deemed casual water, a temporary accumulation of water must be visible on the surface of the ground, or at least there must be enough water present to cover the thickness of the sole of a shoe under normal pressure of the player's weight. As for interference by an ob-

struction, the interference must be physical for the player to invoke the Rule. The Rule is not intended to cover mental interference or interference established by wild contortions.

Stroke Play

With two important exceptions, the procedure which a referee should follow for stroke play is very little different from that for match play. He should work with his observer, follow play, and call penalties with the same alertness as for match play. He is equally interested to ensure that the part of the competition for which he is responsible is fairly played under sporting conditions. He should feel no reluctance to call penalties even though other competitors without referees may not be subjected to the same critical examinations as those in the group for whom the referee is responsible. All those in contention for the championship probably will be playing with referees assigned to their groups.

The first adjustment which a referee must make in covering stroke play concerns the difference in the Rules for match and stroke play. If a referee does not know the Rules well enough to be familiar with these differences, he should not be assigned to officiate. Therefore, there is no need to do more than mention a few of these differences: a stroke must be recalled if the ball is not played from within the teeing ground; determination of the order of play becomes less important; concession of putts is eliminated, and the play of every hole must be completed; etc.

The second important point of difference in stroke play as compared with match play is that the referee is not burdened with an absolute necessity of reaching all decisions on the course. By having the player take advantage of the right in stroke play to complete the play of a hole with two balls (Rule 11-5), the referee is in a position to pass the burden of making a sticky decision to the Committee in charge of the competition. It is for this reason that the Rules give the Committee the right to limit a referee's duties in stroke play (Definition 26). The Committee may even wish to go further and to retain for itself the right to make all decisions. This might be done if the Committee questions a referee's knowledge of the Rules, or if inability

to provide referees for all leading competitors may raise the issue of inequality of supervision, or when the principal reason for having a referee may be to expedite play and handle galleries. In such instances the duties of a referee may be limited to the determination of facts; his procedure with respect to infractions of the Rules is restricted to calling them to the attention of the competitor. Any further limitation of the duties of a referee would be tantamount to the elimination of his position as a referee.

One final word of caution to referees. When in charge of a play-off for positions in a qualifying round, a referee should not overlook the fact that it is conducted under stroke play Rules, even if only two competitors are involved.

The Committee

Since the referee's authority stems from the Committee in charge of competition, it is well to examine also the responsibility of the Committee members as individuals. Their functions as a group have already been fairly well outlined in the references made to their authority, but when they are not referees their duties and obligations while observing play or on station assignments on the course are another matter.

In the first place, it should be clearly understood that a Committee member is in no sense a referee (unless specifically so designated). When he is present on the course, either by chance or assignment, he is only a representative of the Committee. As such he has definite obligations, but they will vary greatly between match play and stroke play competition.

In match play without a referee, involvement in the outcome of any particular match is entirely restricted to those playing in it; and since the players involved are present to protect their interests, there is no reason for a Committee member to take any cognizance of Rules infractions which he may observe. His presence on the course is for the sole purpose of being of assistance to the players in the event of a claim (Rule 11-1a and Rule 11-3). When a claim has been presented to a member of the Committee on the course, his handling of the situation will depend upon the authority granted him by the Committee and upon

the exercise of his own judgment. A Committee may wish to grant the individual members unlimited authority to represent the Committee by making final decisions, or it may wish to limit this authority. This is an issue on which a clear decision must be made. However, regardless of the authority extended to individual members of the Committee, when in doubt they may wish to obtain action from the full Committee. Such action must be arranged for immediately unless the players involved are willing to continue with their match subject to a later decision. However, deferring a decision should be resorted to only under extraordinary circumstances, since it is a principle of match play that each side is entitled to know the status of the match at all times.

In a stroke play competition, the position of a Committee representative on the course is wholly different. Now every competitor has direct interest in the play of all other competitors. Since only those competitors playing in a given group can represent the interests of the absent competitors, it becomes the obligation of every Committee member also to represent the interests of the remainder of the field. Thus, the Committee member must act on any probable violation of the Rules which he may observe. This may be accomplished by immediately questioning the competitor about his procedure. Also, the Committee representative on the course will be called upon to make decisions and they should be handled as for match play, except that the need for immediate decision is less urgent.

The Spirit of Officiating

Participants in an event are keenly conscious of the spirit in which it is conducted. There is no more certain way to injure the reputation of a tournament than by lax management. It may be difficult and unpleasant to be punctilious in enforcement of Rules, but it is a rare golfer who does not prefer to compete in a well-run event. Players are quick to recognize the official who makes use of his position to watch the play better or to inflate his own sense of importance. Authority should be exercised for the sole purpose of helping to ensure that an event will be fairly played under sporting conditions.

EQUIPMENT FOR A REFEREE

Rules of Golf booklet.
Score card.
Local Rules, if any.
Pencil.
Tape measure or string.
Watch.

CHECK LIST OF SOME DUTIES OF A REFEREE

(a) **Introductory:**

Read Definition 26.
Read Rule 11.

(b) **No. 1 Tee:**

Instruct observer.
Identify players' balls.
Ask players whether they have counted clubs (Rule 3).
Tell players of main duties of referee and observer.

(c) **Teeing Ground:**

Be in position to see balls teed (Definition 32).

(d) **General:**

Stay close to players at all times (but do not chatter).
Determine who is away before players arrive (Rules 20 and 35-2b).
Prevent spectator interference; if necessary, stop play and tell players what is being done.
Try to help players avoid infractions by calling attention to Rules which they may be about to breach.
Do not handle ball or flagstick (except in measuring). (Definition 26).
Rulings: (1) Determine facts clearly.
(2) Try to determine player's intent.
(3) Let players read Rule.

Be in position to see each player address and play ball.

Did ball move after address? (Rule 27-1d)

Did player strike ball twice during stroke? (Rule 19-2)

Second ball: Why was it played? (Rules 11-5, 30)

Was ball affected by outside agency when:

(1) In motion (Rule 26-1a).

(2) At rest (Rule 27-1a).

Immovable obstructions (Rule 31-2):

(1) Is there physical interference?

(2) What is nearest point on outside of obstructions?

Is a ball unfit for play? (Rule 28)

Casual water: Does it fit Definition 8?

(Rule 32)

Location of ball: Is it—

(1) Within confines of a hazard? (Definition 14, Rule 33)

(2) In ground under repair? (Definition 13, Rule 32)

(3) Out of bounds? (Definition 21, Rule 29)

Out of Bounds: When in doubt, stretch tape measure, string or gallery rope between posts or stakes, on their inside faces, near the ground. (Definition 21)

Hazard:

(1) Advise player when ball is in hazard if there can be any question.

(2) Was a loose impediment touched or moved? (Rule 33-1)

(3) Did club touch ground before downswing? (Rule 33-1)

Through the green: Did player improve lie by:

(1) Smoothing irregularities (Rule 17-1)

(2) Moving grass (Rule 17-2, 17-3)

(3) Improperly moving bush or small tree (Rule 17-3)

Putting green:

Ball striking ball—note position of ball moved. (Rules 35-2c, 35-3c)

Ball lifted—ensure replacement in right place (Rule 22-3)

Line of putt: Was it touched except to remove loose impediment or to repair ball mark? (Rule 35-1a)

Ball on lip of hole: Is it at rest? (Rule 35-1h)

Match play: Was putt conceded? (Rule 35-2d)

(e) **Stroke Play:**

Are referee's duties limited? If so, how?

Qualifying play-off: It is at stroke play.

(f) **Foursome:**

Warn about incorrect order of play, in advance (Rule 15)

Penalty stroke does not affect rotation of play (Rule 24)

COMMITTEE MEMBERS ON COURSE

(a) **Match Play:** Do not intervene, even if infractions are observed.

(b) **Stroke Play:**

Take cognizance of any infraction, and notify player and marker.

Try to help players avoid infractions by calling attention to Rules which they may be about to breach.



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. "61-1" means the first decision issued in 1961. "D" means definition. "R. 37-7" refers to Section 7 of Rule 37 in the 1961 Rules of Golf.

BALL NOT IN PLAY IS EQUIPMENT

Revised USGA 60-8
D. 5, D. 7, R. 40-3b

Note: This supersedes Decision 60-8 dated March 11, 1960.

Q: The 9th hole at Ponte Vedra is a par 3 with an island green. A and B were partners against C and D in a four-ball match. A hit his ball directly across the water into the bank of the island and then watched it trickle down into the water. B drove onto the island about five feet short of the green but within 20 yards of the hole. C drove onto the green, about 10 feet from the hole. D drove into a trap—his ball does not enter into this discussion.

Where A's ball went into the water is not a lateral water hazard, and he should have played another ball from the tee side of the water. However, he made a remark to the effect that his ball did not make any difference any more, walked across the bridge, dropped his ball on the green side of the water and chipped up to within three feet of the hole. A's ball was then between B's ball and the pin, and slightly to the right of the line of play which B would normally take.

B chipped on the green. His ball hit A's ball solidly, ricocheted to the left

and stopped about two feet from the pin.

The question is whether or not B could then play his ball where it lay with or without a penalty. B sank the putt for a par 3 which was immediately questioned, as he halved the hole with C, who also got a par 3.

Question by: HARRY B. SCHNABEL,
President

Ponte Vedra Men's Golf Association
Ponte Vedra Beach, Fla.

A: C and D won the hole as the facts seem to indicate that A's ball was not in play under Definition 5 when it was struck by B's ball.

A's ball, not in play, should have been considered equipment under Definition 7. Therefore, B should have been disqualified for the hole under Rule 40-3b when his ball struck A's ball.

BALL IN MOTION:

- (1) STOPPED INTENTIONALLY WITH CLUBHEAD
- (2) PENALTY FOR PLAYING

USGA 61-11
R. 16, 25-1, 26 3a

Q: A competitor's ball was at rest on the side of a hill. As he was making a few practice swings near his ball, it started to roll downhill. He stopped the

ball with his clubhead. When he removed the club, the ball started to roll again. He stopped the ball again and, realizing that if he again removed the club the ball would continue to roll, took a fast swing and hit the ball which was again in motion before it was hit.

How many penalty strokes are involved?

Question by: **LEON KAPLAN**
Waltham, Mass.

A: In stroke play, assuming the competitor's practice swings did not cause the ball to start moving, he should have been penalized a total of four strokes as follows: Two strokes under Rule 16 for purposely touching his ball (or under Rule 26-3a for stopping his ball), and two strokes under Rule 25-1 for playing a moving ball.

In the circumstances, the penalty for violation of Rule 16 (or Rule 26-3a) should not be applied twice.

In match play, the player would have lost the hole under Rule 16 for purposely touching his ball with his clubhead in his attempt to stop it from rolling.

ARTIFICIAL AID: PENCIL MARKED TO ASSIST IN GAUGING DISTANCE CONSTITUTES

USGA 60-48

R. 37-9

I should like a clarification of Rule 37-9 which prohibits the use of artificial devices for gauging distance or conditions affecting play. I am listing several examples and request that you indicate in each case whether its use is permissible or not.

Q.1: Regular eye glasses are clearly artificial devices and they are clearly of great aid to many golfers in gauging distance and conditions of play. Are they acceptable?

A.1: Yes.

Q.2: Is it acceptable to look at a distant green through a pair of standard field glasses which have no "range-finder" attachments or features?

A.2: Yes.

Q.3: Is it acceptable to drop a bit of grass to determine wind conditions?

A.3: Yes.

Q.4: Is it acceptable to use a handkerchief to determine wind conditions?

A.4: Yes.

Q.5: Many golfers let a golf club hang

vertically in front of them as an aid in judging the slope of a green. Is this practice acceptable?

A.5: Yes.

Q.6: Many golfers hold some object (such as a golf tee, a golf club, the finger of one's hand, a golf pencil, a scorecard or other piece of cardboard with pencil marks on it, or a coin), at arm's length and compare a dimension on it with the height of the flagstick, as a means of judging distance to the green. Is this practice permissible?

A.6: Yes. However, this answer assumes that the pencil marks on the scorecard or piece of cardboard are not special marks to indicate distances.

Q.7: After considerable experimentation, I have found that a golf pencil, with dots marked on it representing various distances to a remote flagstick, makes an accurate range-finder. The pencil is used by holding it at arm's length and sighting across it at the remote flagstick. Is a home-made device such as this permissible?

A.7: No. A pencil in itself is not an artificial aid for gauging distance, but when a pencil has been especially marked to assist in gauging distance, its use violates Rule 37-9.

Q.8: Assuming that play is not delayed, is it permissible to step off distances?

A.8: Yes.

Questions by: **N. I. HALL**
Culver City, Calif.

BALL: DEFLECTED BY OPPONENT'S BALL PLAYED SIMULTANEOUSLY

USGA 60-45

Misc.

Q: In a four-ball match, A and B are opponents. Both are within 20 yards of the hole, but neither is on the green. A is slightly away. A plays his shot and B does the same thing a fraction of a second later. Both balls bounce one time and collide in mid-air. Both balls come to rest on the green.

What is the proper ruling for such an occurrence?

Question by: **MISS NAOMI A. VENABLE**
Poughkeepsie, N. Y.

A: As such incidents rarely occur, it has not been found necessary to frame a Rule on the subject. There is no penalty, and the balls should be played from where they came to rest.

**BUNKER:
SAND SPILLING OVER BOUNDARY**

USGA 60-46
D. 14, R. 17-1

Q: Through constant use and improper care, the outline of a bunker which was clearly defined at the beginning of the season is now very ragged with sand "spilling over" the intended outline. The top of the bunker which was grass is now completely covered with sand with only part of the overhanging grass still showing. All the sand is still in "one piece" with grass "bangs" hanging from the edge of the overhanging lip of the bunker. Is this sand which was spilled over the original outline still part of the bunker?

Question by: LEON KAPLAN
Waltham, Mass.

A: No, unless the local committee determines otherwise—see Definition 14d for the Committee's duty here.

A bunker under Definition 14a is "an area of bare ground, often a depression, which is usually covered with sand. Grass-covered ground bordering or within a 'bunker' is not part of the hazard."

However, when playing from sand outside a bunker, a player must not violate Rule 17-1, which provides in part: "Irregularities of surface which could in any way affect a player's lie shall not be removed or pressed down by the player." A note to this Rule provides that irregularities of surface include sand.

**BALL UNFIT FOR PLAY: STATUS
WHEN DAMAGE OCCURRED ON
PREVIOUS HOLE**

USGA 60-47
R. 28

Q: In an extra-hole match, B had a short putt to defeat A. A's ball had been cut during play of a previous hole, but he had continued playing with it. However, as he was now confronted with a short putt to win the match, he wanted to be sure not to miss it because of a damaged ball. He therefore informed A of his intention, and replaced the ball with a new one under Rule 28. He holed the putt to win the match. A, before either player left the green, then claimed the match, contending that B had no right to replace his ball because it had not been damaged during the play of that particular hole.

The Committee, after first determining that B had not declared the same ball, in the same condition, unfit for play on a previous hole, ruled that B was within his rights to replace the damaged ball. Was the Committee correct?

Question by: CHARLES P. STEVENSON
Buffalo, N. Y.

A: No. Under Rule 28, B could have replaced the ball only if it had become unfit for play during the play of that particular hole.

**BALL LIFTED: RELATIVE POSITIONS
OF MARKINGS MAY BE CHANGED
IN REPLACEMENT**

Revised USGA 60-54
R. 9-1, 22-3a

Note: This supersedes Decision 60-54 dated Nov. 28, 1960.

Q.1: Is a player who has teed off with a badly cut ball permitted to turn the ball around after he has reached the putting surface so that the cut portion of the ball is facing away from the putter blade?

A.1: Yes, provided he had the right to lift the ball (as, for example, under Rule 35-1d). Rule 22-3a requires that a ball lifted on the putting green be replaced on the spot from which it was lifted. It would be almost impossible to replace it without turning it to some extent, and the Rule does not require that the ball's markings be placed in the same relative positions to the line of putt as in the original lie.

Q.2: On the putting green, when a player has picked his ball up to clean it, is he permitted to replace the ball in the same spot and rotate the ball so that the trademark is aimed along the intended line of putt?

A.2: Yes. See Answer 1 above.

**CLUB: PARTNER MAY NOT ALIGN
PLAYER'S BEFORE STROKE**

Q.3: Is a player's partner permitted to line up the player's putter so that it is perpendicular to the line of putt?

A.3: No. The Rules do not specifically cover the question, but the player's partner is prohibited from giving such assistance by the spirit of the Rules generally and analogy to the provisions of particular Rules, such as Rule 9-1.

Questions by: J. W. ALTMAN
Chicago, Ill.



Better Turf for Better Golf

TURF MANAGEMENT

from the USGA Green Section

Planning for Safety in Golf Course Work

By ANDREW A. BERTONI

Member, USGA Green Section Committee and Superintendent, Meadowbrook Country Club, Northville, Michigan

(Presented at Biltmore Hotel, New York, Friday, January 27, 1961; Green Section Educational Program. The Golf Course Worker—Training and Direction).

When I was first asked to present this paper I had no idea of the ramifications that safety could imply and justify. It has captured my interest to such an extent that now I am scared. Needless to say, it has been informative, rewarding, and I have gained a life long lesson.

My Green Committee Chairman, Mr. Schwarze, is with the Labor Relation Department of General Motors. When I inquired if General Motors published some helpful safety literature he introduced me to G. M. Safety Director, Ken Hedges. Mr. Hedges listened, dug into his files, displayed material, and then phoned Mr. Art Kelly of the National Safety Council in Chicago. Between the two of them I have been deluged with enough material to save the whole human race for the next several centuries. I am indebted to them for their cooperative concern and graciousness.

Safety, practically defined, is "the use of techniques and designs to reduce, control, or eliminate accidents." Safety's history goes back to Biblical times. Moses commanded that battlements on houses should have rails so that no one would fall off and the householder be guilty of shedding someone's blood.

Allow me to approach this matter of safety in two ways—the theory of safety and the practice of safety. Then we will draw a few conclusions. Our premise is if the practice of safety is important, then the theory of safety is essential.

We now base our thesis on the fact that safety is and must be a state of mind. Thinking in terms of safety is a better way to work, to play, to live. Safety skills help form desirable habits. Safety is profitable. We find that safety creates an efficiency beyond the state of mind. The elemental competitive spirit of meeting a challenge is a tremendous hidden factor. In other words, a good man wants to improve; if thinking in terms of safety assists he will adopt safe principles to do a better job and to better himself.

A golf course worker must be taught to work the safe way. It helps his mental attitude. Someone cares for him. It is nature's oldest rule. Safety should have the fervor of a religion; it is a faith in a true sense. Science has progressed in every field; let us make use of it in our accident prevention thinking.

Among the grave responsibilities that rest with the country clubs and the superintendents is the providing of safety

conditions and safety equipment, plus the inculcation of a positive and consistent approach to the realization and appreciation of the real meaning of safety education and its application. While engineering safe conditions is important, it is more important to make every golf course employee want to work safely.

We can perceive that the work of safety engineering needs to be supplemented by safety psychology. The course worker must be educated in safety-mindedness. Sometimes for their own protection the workmen must be shocked, shamed, threatened, and frightened. Safety work demands zealous, persistent attention. Every appeal should be made. The appeals should vary and not be monotonous.

Further, the study of safety is designed to inform persons of the many hazards they meet, to help them evaluate the "calculated risks," to make the individual golf course worker more skillful in overcoming hazards, to develop his thoughtfulness, and to teach him to consider the probable results of his action as related to himself and others. He must know that the avoidance of accidents is more likely to result from knowledge and attitudes of thoughtfulness and thinking than it is from mere chance. Certainly one must know the dangers to avoid them.

Accidents Are Expensive

We can draw this conclusion: that safety and accident prevention is one of the most important tasks of the superintendent. (This is a silent attest to his safety efficiency, judged by the few accidents on golf courses.) Accidents are expensive; golf course maintenance may be slowed down or stopped completely. Valuable workers may be temporarily or permanently lost. The accident may result in a neglected golf course or even the country club's loss of community good will. Even more important than the loss to the club is the effect on the worker and his family. No greenkeeper's family can afford long periods of no or limited income, even though they may be covered by insurance. Therefore, from this standpoint alone the superintendent and the club must make certain that every operation is carried on as safely as possible. Safety equipment required for the job must be adequate, it must be

in good working order, and it must be in constant use by the golf course worker.

I am a firm believer that personal problems effect your personnel. An anxious, fearful, worried employee is likely to become inefficient, dissatisfied, and ripe for an accident. In the "Handbook for Supervisors" by Ecker et al, it is claimed that morale or attitude of a worker towards his job is a significant element in production and safety. He is a hazard not only to himself but also his co-workers if his attitude is negative. It is obvious, they claim, that a worker with generally good morale will: (1) believe that he has a good job, that he is recognized, and that his co-workers are skillful and safety conscious and that his club is one of the best; (2) likes his job, those with whom he works, and the club; (3) tend to work efficiently, safely, and to the maximum of his ability, co-operate fully with his fellow workmen and do all he can for the good of his club. Conversely, a worker with poor morale will believe, feel, and do the opposite of each of the above.

Pursuing the theory that safety is a state of mind, these two fundamental principles are of consequence: (1) That constructive suggestions and positive directions are of more value than a list of "don'ts." (2) That emphasis should be

COMING EVENTS

August 8-9

1961 Rutgers Turfgrass Field Days
Rutgers—The State University
New Brunswick, N. J.

August 23-24

Rhode Island Field Days
University of Rhode Island
Kingston, R. I.

September 7-8

Alabama Turfgrass Conference
Auburn University
Auburn, Ala.

September 12-13-14

Florida Turfgrass Conference
University of Florida
Gainesville, Fla.

September 14-15

Midwest Field Days
Purdue University
Lafayette, Indiana

September 27-28-29

Northwest Turf Association Conference
Washington State University
Pullman, Washington

placed upon the promotion of safety and the prevention of accidents, as a means of insuring greater usefulness and happiness in life rather than fear of injury. Safety education should develop courage with prudence as distinguished from foolhardiness.

A Good Safety Record

Before we proceed to the practice of safety I think it is appropriate to appraise and to praise the superintendents and their safety records. It would be interesting to secure data of accidents on golf courses. I cannot recall a single fatality, except from overwork, of course! There must be an unconscious safety endeavor on the part of the superintendent. He loves his work, he is a wise practical character with an extremely sensitive conscience. He is a God-fearing man who is his 'brother's keeper.' The superintendent is keenly aware of the safety and welfare of his crew. Golf courses can consider themselves fortunate that there have not been many fatal or serious injuries. And as you know, the miracle is not that there have been so few but that there have not been more!

As you have intelligently surmised, the superintendent is the key man in safety on the golf course. He must clearly understand so that he can be clearly understood. There must be a contract of understanding between worker and superintendent. Incidentally, this is true in all other operations. Thus, principles of safety advises us in areas other than accident prevention.

Know the Dangers

There are many hazards in golf course work, but as in any well-regulated business these hazards have been carefully analyzed and safety rules and practices have been established. It becomes the superintendent's responsibility to instruct the groundsmen to become familiar with the dangers of golf course maintenance, to understand and appreciate the adopted safety regulations, to use the safety devices provided, and to develop a sharp awareness of the importance of the safety measures. As we said, our work is not without some hazards but the intelligent and instructed worker can do his work with a high degree of safety under most conditions if he calculates the

risks and takes the proper precautions to meet them.

Now I would like to recognize some of the specific hazards in this esoteric occupation of maintaining grounds for the refined shinny player. This will be an informal listing with no special order. If I relate what we do at Meadowbrook it is because, as in all talks of this type, it is necessary to resort to personal experiences. Our workmen are taught to watch out for themselves and for other crewmen. We ask that they keep track of each other at all times on the course. Since they are in danger of flying golf balls the men wear white pith helmets and uniforms. The factor of being seen and protected justifies this cost.

Heat can cause prostration, sunburn, excessive perspiration, etc. Sedatives, restoratives, creams, ointments—preventative and curative—insect repellants in various forms, are all part of each man's first aid kit.

Cold causes frost bites, exposure, etc. We furnish suits of thermal underwear, boots, gloves, uniforms, and coveralls. (These are actually cheap fringe benefits. They more than pay for themselves in increased work output.)

Rain and lightning: The USGA has done a fine presentation on this. Our men are instructed to go out in their cars to bring in stranded members and caddies.

Driving: On the course, club property, etc., the people—golfers and children—are hazards. We have speed limits. On our tractors and other mobile equipment are mounted multiview mirrors, similar to the type used on busses. Brakes are constantly checked; parking or stopping on steep hills is forbidden. Keys are never left in equipment. Mounting and unmounting can be hazardous; men are taught the correct method. We request all employees to walk around a piece of equipment before it is mounted.

Mowers: These are the treacherous villains. And they should be treated as such. One person only adjusts the reel at a time. Leather gloves are worn when adjusting in the shear area. It is interesting to note that there are twice as many finger amputations for the age group under 18 years than all others. One can readily see why some states will not allow youths under 18 to work with power

equipment. A skilled, experienced man handles this for us. Let's put it this way: we place the coolest man on the hottest job. We have one rotary—the man who uses it has protective safety shoes. Common sense safety practices are in effect when work is done in any way, any place, any time, with mowers. The danger of burn, hand, finger, or foot injury, multiplies when in the mower area; therefore, precautions and safety practices should multiply in ratio.

Electricity: Know where the live wires come into the buildings and on to the course. Alert your crew on switch operation. Motors should be as automatic as possible. Have warning signs, paint danger areas, lock buildings or fence.

Chemicals are big bad wolves. In general, instruct your crew to treat all chemicals with utmost respect. Again, we furnish rubber gloves, aprons, boots, face masks, goggles, and protective creams. If it is not too windy, we want chemicals mixed outside for good ventilation. We have built a platform so that workmen can put chemicals down into a tank rather than hold it up overhead. This avoids spilling into the eyes, face, and body. Plastic containers and measuring cups are safer, we find. May I suggest to the manufacturers that chemicals be marked in a better manner, including dangers and precautions involved and the antidotes prescribed. At my suggestion some manufacturers prepared their chemicals in soluble glutinous bags—no handling, no measuring—so that we just throw them in. There is much room for improvement. Superintendents should warn the workers against skin contact, eyes, breathing, and swallowing. Smoking should not be permitted. Chemicals should never be stored near seed or fertilizers; they can sterilize and contaminate. They should be stored separately with containers tightly secured and under lock and key.

Material handling: Avoid storing heavy objects overhead. They can fall down, and they can cause strain. One author on safety warns us, "Lifting, carrying, lowering objects, are among the most dangerous jobs in industry. Strains, sprains, bruises and cuts result from this type of activity. Handling loads that are too

heavy, using the back muscles instead of the leg muscles, not having a proper grip on an object, not using proper tools for lifting, not having a firm footing, or jerking or twisting the body rate among the chief causes of injury."

Digging and tree trimming: These activities require constant alertness and good equipment such as sharp saws, clipper, ladders, picks, and axes with tight handles. We hire professional tree trimmers. They have insurance, recognize their own hazards and in the long run are cheaper. We do some trimming from the bucket of our tractor front loader.

Shop: The common sense rules of safety that prevail in industry and good garage operations pertain here. "Good housekeeping" means clean buildings, floors free from obstacles over which one can fall, floors clean of oil and grease, rags, rubbish, and other hazards. Proper lighting and ventilation, especially for spray painting, is essential. In research for this paper I read with interest that touching any part of a broken fluorescent light is dangerous because of the inside coating which retards healing and can cause complications. Proper and sharp tools, guards, double jacks, etc., are a safety must. We have our employees take turns cleaning up the shop—in this way all are acquainted with the handling of tools, where they belong, and they personally partake in the hazard prevention program.

Fire: It is a good idea to mark your calendar on the date the extinguisher should be checked. This month's Good HOUSEKEEPING magazine has an article on fire extinguishers. These three points scare me: (1) Your fire extinguisher may be useless when needed; (2) They may spread the fire if used incorrectly; (3) Some can produce dangerous gasses. So be sure of yours; have you checked them recently?

Perhaps you may gain something from these practices. Every piece of equipment for each man has a first aid kit and fire extinguisher for any emergency. We have saved three electric carts that got too hot.

Around our ponds we place life savers and ropes; although players and children should not be there, they are!

Signs are placed at No. 1 and No. 10 tees notifying members that greens have been sprayed and warning them not to place ball to mouth; also to clean shoes before entering locker room. We also alert locker room attendants.

In a twofold effort to teach and practice safety, we have our men constantly seek out hazards on the course. This may surprise you, but some of our best ideas are tapped from this source. Ramps for electric carts from steep tees suggested by an employee eliminated the roller coaster atmosphere and also the dangers.

There are many, many more instances on a golf course where hazards exist and where safety practices could apply. The few that we have touched upon should create at a golf club an awareness that perhaps the safety aspects have been neglected. If this paper will rouse us from complacency to comprehension, then it has served its purpose.

Recommendations

Now I have a few recommendations that you can mull around in your heads:

1. That a committee be appointed that could further study and explore the potential of safety factors regarding golf course operations.
2. That the USGA and the G.C.S.A. along with the manufacturers supply golf courses with safety measures and precautions regarding use of equipment, mowers, chemicals, electricity, tools, etc. Perhaps some safety materials, posters, signs, etc. could come from this cooperative venture.
3. Establish within the USGA and the Green Section, a safety committee. Its duties would be to record, publish bulletins, and distribute data to member clubs. Bulletins should be similar to this copy from General Motors. It contains:
 - a. Accident—circumstances, etc.
 - b. Injury—type, detail, etc.
 - c. Cause
 - d. Correction, avoidance of re-occurrence
 - e. Recommendation

This could result in promoting safety

on a national scale. It could be an enhancement for new USGA members.

4. Initiate overtures to the National Safety Council, exploring their facilities, utilizing their experience, and requesting recommendations.
5. Set up schools on safety or push for the inclusion of this topic at the various conferences. Doctors, first aid teachers, safety engineers, would be welcomed speakers. This way, the superintendents could relay this knowledge to golf course employees.
6. That if the associations do not immediately adopt these recommendations I suggest the individual clubs start their own programs on safety.

I kept this quotation from Harold H. Burton, Justice of the U. S. Supreme Court until the last. I feel it summarizes our thoughts quite well:

"As a prevention of disease is better than its cure, and prevention of war better than victory, so prevention of accidents is better than to attempt compensation for them . . . Teaching the world to be careful is a constructive service worthy of God's great gift of life to Man."

SUBSCRIBERS TO U.S.G.A. GREEN SECTION RESEARCH AND EDUCATION FUND, INC.

Augusta National Golf Club,	Augusta, Ga.
Catto & Putty,	San Antonio, Tex.
Clapper Co.,	West Newton 65, Mass.
Bob Dunning,	Tulsa, Okla.
Floyd Farley,	Oklahoma City, Okla.
A Friend of the USGA	
Donald Harradine,	Magliaso Tessin, Switzerland
Lionel MacDuff,	Lynn, Mass.
Metropolitan Golf Writers' Association,	Manhasset, N. Y.
National Golf Fund, Inc.,	Dunedin, Fla.
New England Golf Association,	Boston, Mass.
Connecticut State Golf Association	
Maine State Golf Association	
Massachusetts State Golf Association	
New England Golf Association	
New Hampshire State Golf Association	
Rhode Island State Golf Association	
Vermont State Golf Association	
J. H. Watson,	Marietta, Ohio

Factors Limiting Turf Quality

BY W. WAYNE ALLEN

Southwestern Agronomist, USGA Green Section

Quality can be evaluated quantitatively for most plants: However in the case of turf, measurements such as protein content or yield of dry matter have little meaning in relation to turf quality. While some quantitative measurements are made, visual observations serve as an important facet in turf quality evaluation studies.

There are many factors which can affect turf quality, both favorably and unfavorably. Of the more prominent, one should consider the variety or species of turfgrass used; the soil, both from a physical and chemical standpoint; water, amount available and movement; insects; weeds; and diseases. Several considerations should be made relative to each of these.

Variety or Species

In many cases improved turfgrass varieties or hybrids respond better to fertilizer, resist diseases better, and are more cold and drought tolerant than the commonly used type. Certain grasses are better adapted to light intensities and day lengths of one locale than to another. These factors plus others should be considered when selecting the plant necessary for producing the best quality turf.

Soil — Physical Conditions

According to Baver (1956) "the mechanical behavior of the soil mass is referred to as the 'physical properties' of soils." Soil is made up of solid, liquid, and gaseous materials. The solid may be organic or mineral; the liquid is the soil water which may fill part or all the spaces between soil particles and which varies in chemical composition and freedom of movement; the gaseous portion of the soil is the air in the soil. Of utmost importance is the relationship of these components one to the others in the complex soil system. However, each can produce adverse effects of itself if altered from its ideal state.

Compaction affects turf quality in several ways, most of which are indirect. The compacted surface not only encourages weed growth but is unfavorable for optimum growth of turfgrasses. As soil is compacted the capillary pore space is in-

creased, the noncapillary pore space is decreased, thus reducing the air space. Conditions such as these are not conducive to optimum growth and should be prevented as much as possible.

As part of the solid material, the clay fraction plays a vital role in the exchange capacity of the soil. Soils containing high percentages of clay are usually fertile because such a soil is capable of holding relatively large amounts of the fertilizer elements. Under traffic where compaction occurs, a large amount of clay in the soil can become detrimental, thus reducing the noncapillary pore space and increasing the capillary pore space. Compaction of soil can be much less of a factor causing poor turf quality if the percentage of the clay content is kept low enough that it does not fill all the noncapillary pore space.

Coarse sand, which resists compaction, doesn't enter into the nutritional picture because it has less ability to absorb or adsorb nutrients. Consequently, soil of a sandy texture generally must be managed differently than soil of a fine texture.

The voids (or pores) between soil particles play a vital role in the water-holding capacity of the soil as well as its degree of aeration. As soil is compacted its structure is altered. Turf quality is lowered by the actual wear during compaction but this wear is usually visible immediately while the effects of compaction may not be expressed until the problem has become critical.

Soil — Chemical Condition

Of the many essential elements used by plants there are three that are most often lacking because they are used in relatively large quantities: nitrogen, phosphorus, and potassium. While none of these elements may be deficient as determined by a soil test, one or more may be out of balance with respect to the other or others. This is to say that not only is the minimum level to be considered but also the overall nutrient balance.

Water

Turf quality is not only affected by the amount of water applied but also by its movement in the soil after application.

Assuming optimum amounts are applied, let us consider some causes for poor turf quality attributed to water management.

Salty water can greatly affect turf quality. Often when such water must be used it is necessary to periodically flush the turf area well with great quantities of water in an attempt to move the salts down and if possible out of the root zone. Sodium in the soil water not only affects plant growth but it may also contribute to the breakdown of soil structure and thereby impede drainage and percolation.

Impeded movement of water through the soil as a result of layering often affects turf quality. A coarse-textured surface layer generally will tend to dry much sooner than a fine-textured surface. Because of a difference in the surface tension characteristics of coarse-textured and fine-textured soils, water movement is affected by any abrupt textural change.

The ideal situation for optimum water movement through the soil is a uniform structure down to a layer somewhat coarser in texture. Water will enter the coarse layer after all the soil has reached field capacity and the lower portion becomes saturated. Conditions such as these limit the possibilities of poor turf quality caused by water-logged soil, salt accumulation, and poor aeration, which seem to invite disease and weed invasions and ultimate turf destruction.

Weeds

Weeds limit turf quality in several ways. They use nutrients and water which could have been used by the turf. In many cases their life span is not the same as that of the turf, consequently when the weeds die there are barren spots left in the turf.

Often weeds can be eliminated from the list of causes of poor turf quality by practices such as using clean seed, sterilized topdressing, judicious irrigation, and the use of herbicide applications when necessary and when possible to do so safely.

Insects

Turf quality is often lowered as a result of insect damage. Some of these pests are surface feeders and as such they chew the foliar parts of the plant. Others are subterranean feeders and feed on roots and rhizomes. Each should be

controlled during its most vulnerable stage of life, if possible. For example, should the insect feed mostly at night, the insecticide should be applied in late afternoon and allowed to remain overnight. Should the insect be a root feeder, the insecticide should be applied late to move it down into the pest's habitat.

The surface feeders leave discolored scars on the above-ground parts of the plant. The usually irregular feeding scars desiccate and die, leaving a generally unsightly and weakened turf. The density of the turf can be affected directly by the surface feeders.

The subterranean feeders utilize the plant parts below the ground. For this reason their presence may go undetected for a longer time than the surface feeders. However, should their numbers be sufficient the damage will be evident.

Diseases

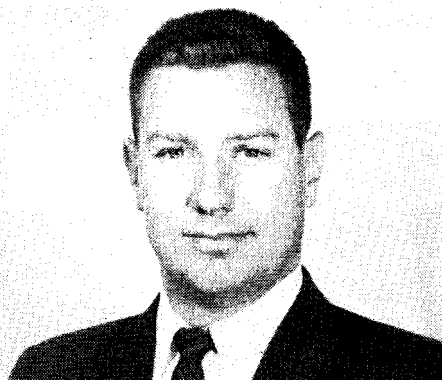
Many plant diseases are known to affect turf quality. In some cases, obtaining a stand is not possible as a result of seedling diseases. It goes without saying that if a stand is not obtained turf quality will be poor.

While healthy turf is capable of withstanding and overcoming attacks by some pathogenic organisms, severe damage sometimes occurs. Turf is very often affected by disease to the extent of a complete loss. Sound turf management is sometimes the major key to disease prevention, but quite often fungicides are necessary for preventative and control programs. Diseases for which cures are known should never be allowed to deprive us of desired turf quality. Even though many pathogens are extremely prolific, keen observations can often detect their presence soon enough to begin control measures before damage occurs.

In summary, as we compare each of the factors mentioned to links of a chain, we readily see the contribution of each toward producing turf of maximum quality. Not only can each factor be critical when singled out but also of importance is the interrelationship of all these factors.

The excellence of turf will be related to the ability of the manager to overcome the factors which are detrimental to turf quality. Any one of the limiting factors discussed may prevent good practices in every other facet of management from producing high quality turf.

Joins Green Section Staff



Charles E. Croley

Charles E. Croley has been appointed an Agronomist in the Southwestern Office of the USGA Green Section. The office is at Texas A and M College, College Station, where Mr. Croley is studying toward a Master of Science degree in Turf Management.

He received the Bachelor of Science degree in Agronomy at Virginia Polytechnic Institute in 1960. While at V.P.I., he assisted in the establishment of the Institute's turf research program. He was also employed by the Virginia Department of Highways and the V.P.I. Agronomy Department to assist in their joint highway turf research program.

Mr. Croley, a native of Houston, served in the U. S. Army's Transportation Corps during 1954-56.

Turfgrass

The use of turfgrass seed on a national basis each year illustrates the importance of turfgrasses. The annual usage of seed of those grasses, primarily considered turfgrasses, exceeds 104 million pounds. Included in this list are the Kentucky bluegrass varieties, chewings and creeping red fescue, bentgrasses, and a portion of the ryegrass varieties. Over 60 percent of this total poundage of grass seed was produced in the Northwest states. In Washington, turfgrasses account for 56 percent of the total grass seed production. It is expected this industry will become more important.

—Alvin G. Law

Larus Argentatus Smithsonianus

As golf extends over our land, the problems of the Green Superintendent vary from freeze-up to crabs and rattle-snakes.

To the golf courses, bordering on the ocean, or salt water inlets, unique problems present themselves during the winter.

The Great Scavenger

To the non-ornithologist, the title above is the Latin name for the Herring Gull, who is the great scavenger of our salt water coasts. Gulls live on any form of decayed matter, or meat or fish. When the cold winter comes, they tread for clams and mussels. When they find a hard shell clam, the problem is how to open the shell to secure the succulent contents. This is how it is done—with the clam gripped in its bill, the gull flies as high as one hundred feet in the air and drops the clam. Where do they drop it? On the smooth hard frozen surface of a putting green. As the surface of the green is solid, no dents or cuts are inflicted but before the hardy golfers start their play, the greenkeeper uses a scoop to clear bushels of broken shells from the green.

This is not all. The droppings from the gulls are highly fertile and when the spring thaw comes, each dropping creates a burnt spot about one inch in diameter but bordering the burnt spot is a beautiful circle of strong green grass, twice the size of the burned out spot.

During the Spring high tides and a hurricane like Donna, many fairways on the low lying coastal courses are completely covered with salt water. Worms do not like the salt. According to H. Burton Musser, "earthworms aid in aerating the soil and thus are beneficial to turf."

Descent for a Feast

As the salt forces the worms out of the soil, they float in the salt water and thousands of gulls descend on the course and feast on earthworms. The destruction of a single worm is a contribution to compaction.

—Gilbert Tompkins

IT'S YOUR HONOR

Uniformity in the Rules

TO THE USGA:

In "Golf, Its Rules & Decisions" by Richard S. Francis, published in 1937, the following is stated by former President of the USGA John G. Jackson:

"... the Rules . . . provide the fairest way of playing the game that is consistent with experience.

"The much desired result (is) Uniformity in the Rules whenever the game is played and playing the game in accordance with these Rules."

In the same volume the author states:

"Anyone who attempts to say that this or that in the Code is a horrid technicality, without real merit, is arguing against the considered judgment of many generations of sane and sensible golfers."

Any orderly society must have a governing body and a set of rules that all members must conform to. The Constitution of the USGA gives it the power to adopt, enforce and interpret the Rules of Golf. Adoption of other rules by other golf organizations would be comparable to the Board of Supervisors of the County of Los Angeles attempting to change the laws of the State of California or declaring that its citizens were not bound by some state laws. This, of course, if carried to its logical conclusion would result in the destruction of law (in

our case the Rules of Golf). If one district association can change the Rules of Golf, then every other association in the United States can change any part of the Rules their governing members happen to dislike. This could well result in the destruction of the game of golf itself because it would have difficulty surviving without rules for the playing of the same. Certainly this is true if golf is to be played on a national basis.

JOSEPH W. VICKERS

Los Angeles, California

On Finding Golf Balls

TO THE USGA:

I enjoyed reading Miss Margaret Curtis' article on the art of finding golf balls in a recent issue of the JOURNAL. I was born and raised in the little town of Manchester, Mass. and, like many of the kids, caddied at the Essex County Club where Miss Margaret played often.

On rainy days the caddies would go out hunting for golf balls to earn a little change for the day from a local store which purchased the balls for prices ranging from ten to 30 cents in accordance with the marks, cuts, etc.

Miss Curtis mentioned the gutta percha ball. Back in the period when I was a caddie, 1918 to 1922, we frequently ran across one of those only to take a practice swing and hit it back into the woods.

Sincerely,

BYRON P. ROBERTS
Arlington, Va.

USGA OFFICERS, EXECUTIVE COMMITTEE AND COMMITTEE CHAIRMEN

OFFICERS

PRESIDENT

John G. Clock, Long Beach, Calif.

VICE-PRESIDENTS

Clarence W. Benedict, White Plains, N. Y.

John M. Winters, Jr., Tulsa, Okla.

SECRETARY

Wm. Ward Foshay, New York, N. Y.

TREASURER

Bernard H. Ridder, Jr., St. Paul, Minn.

EXECUTIVE COMMITTEE

The above officers and:

Fred Brand, Jr., Pittsburgh, Pa.

William C. Chapin, Rochester, N. Y.

Edward L. Emerson, Boston, Mass.

Edwin R. Foley, San Francisco, Calif.

Harry L. Givan, Seattle, Wash.

Hord W. Hardin, St. Louis, Mo.

Robert K. Howse, Wichita, Kans.

Harold A. Moore, Chicago, Ill.

Eugene S. Pulliam, Indianapolis, Ind.

Henry H. Russell, Miami, Fla.

GENERAL COUNSEL

Philip H. Strubing, Philadelphia, Pa.

EXECUTIVE DIRECTOR

Joseph C. Dey, Jr., New York, N. Y.

ASSISTANT DIRECTOR: P. J. Boatwright, Jr.

USGA HEADQUARTERS

"Golf House", 40 East 38th Street, New York 16, N. Y.

COMMITTEE CHAIRMEN

RULES OF GOLF: Wm. Ward Foshay, New York, N. Y.

CHAMPIONSHIP: Bernard H. Ridder, Jr., St. Paul, Minn.

AMATEUR STATUS AND CONDUCT: Harold A. Moore, Chicago, Ill.

IMPLEMENTS AND BALL: Clarence W. Benedict, White Plains, N. Y.

MEMBERSHIP: Edwin R. Foley, San Francisco, Calif.

GREEN SECTION: William C. Chapin, Rochester, N. Y.

WOMEN'S: Mrs. Henri Prunaret, Natick, Mass.

SECTIONAL AFFAIRS: Hord W. Hardin, St. Louis, Mo.

PUBLIC LINKS: Fred Brand, Jr., Pittsburgh, Pa.

HANDICAP: Clarence W. Benedict, White Plains, N. Y.

Handicap Procedure: Herman M. Freyberg, New York, N. Y.

JUNIOR CHAMPIONSHIP: Harry L. Givan, Seattle, Wash.

SENIOR CHAMPIONSHIP: Harold A. Moore, Chicago, Ill.

GIRLS' JUNIOR: Mrs. John Pennington, Buffalo, N. Y.

MUSEUM: Robert K. Howse, Wichita, Kans.

BOB JONES AWARD: Wm. Ward Foshay, New York, N. Y.

FINANCE: Bernard H. Ridder, Jr., St. Paul, Minn.

NOMINATING: Totton P. Heffelfinger, Minneapolis, Minn.

USGA GREEN SECTION

EASTERN REGION

Northeastern Office: Lipman Hall, Rutgers University, New Brunswick, N. J.

Alexander M. Radko, Director, Eastern Region

Raymond E. Harman, Northeastern Agronomist

James R. Kollett, Northeastern Agronomist

Southeastern Office: P. O. Box 4213, Campus Station, Athens, Ga.

James B. Moncrief, Southeastern Agronomist

MID-CONTINENT REGION

Southwestern Office: Texas A. and M. College, College Station, Tex.

Dr. Marvin H. Ferguson, Director, Mid-Continent Region and National

Research Coordinator

W. Wayne Allen, Southwestern Agronomist

Charles E. Croley, Southwestern Agronomist

Mid-Western Office: Room 241, LaSalle Hotel, Chicago 2, Ill.

James L. Holmes, Mid-Western Agronomist

WESTERN REGION

Western Office: P. O. Box 567, Garden Grove, Calif.

William H. Bengueyfield, Director, Western Region