toward the banner record of 1931, when 153,400 rounds were played. This year should see that figure equalled or passed. Annual figures on municipal rounds of golf over Rockford's 3 courses:

1930 1931 1932 1933 1934	134,000 153,400 147,700 105,100 100,500	rounds rounds rounds rounds	1935 1936 1937 1938 1939	91,700 95,000 107,900 119,200 121,400	rounds rounds rounds rounds
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The three courses are maintained in excellent condition and the terrain over which the courses are built make for sporty, interesting golf. Sandy Hollow's greens, in particular, are said to be the finest in the Rockford district.

Maintenance costs for 1939, according to Supt. Elliot's records, ran:

Ingersoll Shady Hol Sinnissippi	low	\$7,033 7,833 4,816
Total		19,682

Since income for this period was \$21,-785, Rockford's muny courses returned a profit for '39 of \$2,103. Elliot cautions, however, that only course maintenance is charged against course income and that new equipment purchases and replacements of present equipment are paid for out of the general park funds. The \$2,103 is of course turned into the general fund and doubtless covered or came close to covering the year's equipment purchases, so that Rockford's municipal golf can plainly be rated as self-sustaining.

How Southern Greensmen Meet Their Special Course Problems

By John Budd, Pro-Supt.

Tallahassee (Fla.) CC

A S a general rule in the South, the Bermuda grass on the greens is playable from about June 1 to November 1. From November 1 to June 1, Italian rye grass usually makes up the putting surface. Naturally in some of our Southern localities these dates would vary.

Let us consider Bermuda grass first, because it is our most important problem. Bermuda, being a running grass, has a tendency to become rank and thick, giving a grainy green. That is to say, the blades all bend in one direction. This makes it necessary to topdress and mow your greens with extreme care so that a true surface will be maintained. By rotating the angle of cut on the green with the putting green mower, you can reduce the grain of your greens. If the grain becomes too rank in your Bermuda grass, try the method used by Fred Haskin at the Columbus (Ga.) CC. He takes a heavy stable broom, or stiff brush, and brushes the nap of the green so the mower will trim it off smooth. He says this can also be done with a scratch rake, but more care is needed.

Howard Beckett, Capital City CC, Atlanta, Ga., is very exacting in his topdressing methods. He keeps on hand a supply of soil, mixed, screened, and ready to use, so it may be placed on his greens at a moment's notice. In this he uses a good percentage of sand. In topdressing a green his men smooth the soil out very carefully before it is dragged into the grass, finishing with an absolutely true surface. I have found that plenty of sand, yes, even 60% sand, in the topsoil is very useful. I like to have sand that will almost cut your hands if you scrub it between your fingers, and that will keep the surface loose and free from packing.

Good Topdressing Pays

George Picard, pro-greenkeeper at the Charleston (S.C.) CC, has always maintained that golf greens are no finer than the topdressing which is being used. He says, "Spend plenty of money for good topdressing and be careful in putting it on, and you will have good greens."

Fred Haskin, by the way, has been one of the few men in the South to use peanut shell, well rotted, as a topdressing material. This substance gives him a spongey surface with plenty of humus-like material around the roots of his grass. However, peanut shells have to be rotted for more than a year if they are to satisfactorily

serve as humus material for topdressing. At Columbus club, Haskin is now using shell material that is more than two years old. He is looking for a chemical to carry out the rotting process in shorter time.

Sawdust as Humus Source

Southern greenkeepers may find use for the many old sawdust piles in the South as topdressing material. My study of this sawdust indicates that it may be the thing for humus material in our greens. There seems to be no harmful factor in it and it certainly keeps a porous green. Most of these sawdust piles are many years old and any organic change has had time to take place.

In selecting topdressing material, I am careful to find soil that will not pack and, further, that has a light consistency. We have found most of this material in wooded areas, and right around the surface of the ground. Many times we only

skim off 6 inches of the surface.

Of greatest value to most greens that I have studied would be a more regular use of sharp sand in the compost heap. We buy ours from a sand company here in Tallahassee, and try to secure the coarsest and sharpest builder's sand.

Few places are able to get stable manure and must turn to other forms of organic matter. We have used sludge from the Imhoff septic tanks of the sewage system, but beware of using this matter unless you can keep it from packing into bricklike consistency. We are now making up regular compost piles of this material, mixed with leaves, sand and woods dirt. Such piles are placed at convenient spots over the course, and are used after one year of seasoning. Every 10 weeks the mixture is turned over with shovels and if possible torn up with rakes. Grass and weeds must be kept out of these piles, as they soon become rampant.

Many clubs down here have tried the plan of having one man do all the mowing each day and then be off for the day. In some cases this will work well, providing your greens are not too large and you can fully train the right man to engineer the mower. When I used this system, I had a negro who could mow all 18 of our greens in 6 hours with a power greens

mower.

Power Equipment Popular

Complete motorized equipment is coming to the front in the South. For years, use of motor equipment in smaller clubs was infrequent because of cheap labor, but during the past 3 years more and more clubs are finding that they get a better job and quicker service from the motor outfits and they also find that the workmen give more to the job.

The man charged with keeping the Southern golf course must appreciate that the course is for play and must be kept in



Photo above shows Red Stevenson, pro at the Clinton CC, Lock Haven, Pa., demonstrating the technique of driving to Bill Strohmeier, of the Piper Aircraft Corporation. Red and Bill have become so interested in the other's avocation that a deal has been worked out whereby Strohmeier instructs Stevenson in flying and Red turns around after each flight lesson and teaches Bill the intricacies of golf. The Clinton club's golfers are rapidly becoming accustomed to having their first fairway playing interrupted by the little cream and red Cub Coupe landing by the clubhouse after Red has taken a flying lesson. While Strohmeier is finding it easy to land on the Clinton course, the British, awaiting invasion by the Nazis, are altering their golf courses so planes can't make a landing on them. And back in America there's plenty of loud wailing that there aren't enough air fields for emergency use, so it may be that the American golf course situation, in a pinch, might supply that deficiency.

the best possible shape with the money at hand. This means that work must be done on a comparative basis so that the most important portions of the course get the best attention. Careful use of money is a great problem in about 80% of Southern golf courses. Expectations for playing conditions are not as high and exacting in the South as in the Northern areas. Golf costs less and there is less to spend on upkeep. With constant care of greens and tees, and the best care possible under existing circumstances for fairways and roughs the Southern greenkeeper can do very well at pleasing his membership.

At Ponte Vedra Beach, Jacksonville, Greenkeeper Landrum trains his crew carefully in the art of polishing the green. By polishing I mean smoothing out any and all rough spots, clearing out every blade of foreign grass, keeping a uniform stand of fine grass on the green, and cultivating a luxurious growth of grass for approaches and banks.

The kind of fertilizer you use should be determined by your local soil conditions. For new seedings I use plenty of phosphate, so that the seed will germinate quickly and strongly. Some study may be necessary in order to determine the best treatment for your own greens.

Water Deep and Long

In watering greens I have found it best to use plenty of time and water on the banks and approaches of the greens. When you do water the greens, give them a heavy drenching so it will go deep and do some real good. We have had good luck with the smaller type of sprinkler, as our water pressure is not very high and the pressure type of sprinkler therefore will not do our work.

Water tees, as a general rule, half as often as you water greens and you will be on the safe side and save money on your water bill.

Thanks are due Roy Land for another hint on keeping true greens. Regular patching of greens with topsoil will gradually smooth out all blemishes on the putting surfaces. Let your men go over the green dropping small handfuls of dirt on the bare spots or dents. Then have another man come along behind them and smooth out each spot of dirt with a wood rake made from one by two strips. A quick circular motion of the rake will smooth the dirt into the grass and correct the bad spot. After three months of this you will have no bad places from picking

Golf and other sports recently have spurted after slumps in England, Scotland and Germany. Official endorsement of sports as easers for war strain has been facitly given, Now, Irish golf courses are following English and Scotch lead in guarding against

use as landing fields by Nazī planes.

foreign grass or from insect spots or blemishes,

Most golfers in the South have realized for years that the maintenance of putting greens is our chief problem. However, other parts of the course should not be neglected. Tom Lundy of Greenville, Miss., tries to keep his entire golf course so clean and well kept that it is practically impossible to lose a ball on the course. He says that this is a golf builder, encourages more people to play the game, and to play more often.

Mow Fairways Weekly

I have found that by using the fairway mower on the course as much as possible, time and money are saved and the players seem better satisfied-the reason being that most courses in the South are not mowed as regularly as those in the North. At Tallahassee we usually mow the fairway once a week in the rush season.

Where money counts in maintenance it will be a help towards better playing conditions if you will mow the area surrounding the greens and out on the fairways in front of the greens for about 30 yards. This gives good conditions for keen play around your greens and will satisfy your players without regular and costly mowing of the entire course. Mow these areas on Friday for week end play.

Landrum, at Ponte Vedra Beach, has done unusually good work with his tees. He uses centipede grass, carpet grass, and Bermuda grass, and gets good results with all. He evidently topdresses his tees and fertilizes them so as to keep a thick, robust growth of grass all the year round. It is really a pleasure to sink your feet into these surfaces while hitting a shot,

Tony Penna, while at Pensacola, was responsible for some of the finest tees I have ever played from. His results were obtained through steady fertilizing, regular watering, and close mowing.

Fred Haskin, at Columbus, uses flat top tees with no rise at the front. Some experts in the South seem to disagree with this method, but Haskin has done a remarkable job with his tees by using this plan.

If it can be done, much hand labor can be saved by building or rearranging your teeing grounds so that the fairway units can mow them at the time the approaches and fronts of green areas are mowed.

A large teeing space is important as it saves money and trouble in the long run. Larger and flatter surfaces seem to be coming into vogue to replace the small, highly built clay platform of a decade ago.

At Albany, Ga., Roy Land uses a minimum amount of arsenate of lead twice a year for control of worms, etc. Arsenate also has to be used for control of cricket moles. We have been using regular applications of 6 lbs, diluted in water for each 1,000 sq. ft. This can be applied with sprayer or from a barrel mounted on a truck. On our greens, we pour a heavy solution of water and soap flakes into the cricket mole holes. We found that it was not necessary to use snuff and arsenate of lead with the soap flakes and water.

Winter Green Technique

On many of the fine courses in the southern states, those having charge of the greens have discovered ways and means of planting and bringing in their winter grass without the necessity of using temporary greens. A schedule is maintained so that the rye or other grass is planted and brought in while play goes on.

Here is the schedule as used on my

course in Tallahassee:

Between the 10th and 20th of October we fertilize, apply poison, seed, and top-dress all at one time. In applying fertilizer we use a minimum amount at this time. We use arsenate of lead only if necessary to control certain insects or worms. We seed carefully, using a seeder, and spreading approximately 75 lbs. of rye seed to a 4,000 sq. ft. green. Our topdressing is then spread on in the usual proportions. We are careful not to bury the Bermuda grass too deep at the time of planting, because we depend on a permanent mat of Bermuda to give us a cushion during the winter months.

The next vital problem is moving during the first 3 weeks after the planting of the rye grass seed.

1. For the first 3 days after planting

leave your mowers at a low cut.

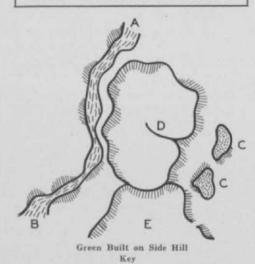
2. From the third day through the tenth day cut your greens only when they have to be cut. Set your mower to cut twice as high as your regular adjustment. During this stage be sure to cut the greens when they are absolutely dry. If they are cut when wet, much of the young and

tender grass will be pulled from the ground.

3. After the tenth day you will have to watch your greens carefully because different conditions will undoubtedly arise. We usually set a schedule of mowing regularly every other day through the twentieth day, at which time the greens should be carefully examined and if they need resowing at any point this work must be done at once. From the twentieth day to the thirtieth day bring your mowers down gradually to your regular cut. We

(Continued on Page 31)

HOW TO BUILD A GREEN



A.B.—Protecting grassy hollow with irregular banks as shown.

C.C.-Sand pits fitting into bank at right side of

D.—Shallow drainage swale, terminating in deep cut in contour of green.

E .- Landing area for approach shot.

THE third and concluding diagram in a series of 'hints on better green construction', by William Watson, noted golf course architect, is presented above. Green diagrammed in June GOLDOM was designed to be a level one, built on level ground. Green pictured in last month's issue illustrated a raised (built-up) green, constructed on level ground. Diagram above illustrates a green built on side hill sloping from the left side, suitable for a par-4 hole of medium length. The green is cut down at the left side and approach, and built up at right, to secure a playable surface.

Greenkeeping In the South

(Continued from Page 16)

never cut our rye grass as close as we do Bermuda. During all your operations it is very necessary to keep your mowers

razor sharp.

I have found that rye grass or other winter grasses need very little topdressing if a smooth surface is prepared before planting. Too much topdressing is likely to cause difficulty when the Bermuda grass begins coming back in the spring.

Through the winter, patch your greens and reseed the bad places every time there

is a need for it.

In early spring your greens can take a good fertilizing. This will strengthen your rye and give it color. It will also start your Bermuda grass growing at the roots.

I cannot see the advisibility of trying to burn the rye grass out of your greens. We have found it best to let the rye die gradually and the Bermuda come in naturally. At our spot this transition takes place about the middle of May, and is completed in approximately 3 weeks. At this time spike your greens, and then spike them some more. Keep the earth open and breathing, so the Bermuda grass will break through and start to run. If

troubled with sourness, use lime and carefully wash it in. If you are lucky enough to have Bermuda seed, this is the time to give a light planting to all your greens, thus strengthening them and perhaps getting a new strain of Bermuda grass.

In dealing with winter grasses, remember that they cannot be brow-beaten like Bermuda. You can hardly kill Bermuda grass but you can knock the daylights out of your winter grasses. In conclusion, treat your Bermuda grass tough — be tender and kind to your winter grass.

Care of the Rough

Following the lead of Tom Lundy, Greenville, Miss., most of us in the South use our fairway mowers to maintain a 3 inch height in the rough. This gives us a close matted growth of grass in our roughs and a minimum of weeds. At the Tallahassee course we use the fairway mower whenever possible, but as most of our rough areas are in the woods, we have to use a hay mower extensively. Early in the winter we clean around the trees in our woods, rake up the leaves, cut out the brush and burn as much as we can without harming the plant life that needs saving.

It is the opinion of all the pros in the Southeast that good clean roughs mean more golf on our courses. We must re-

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GOLFDOM BOOK DEPARTMENT 14 E. JACKSON BLVD. CHICAGO, ILLINOIS member that we are golfers and we should look at the needs of our golf course through the eyes of our golf players, not from a purely theoretical standpoint.

Sometimes it is a good scheme to place a 'kick box' in a convenient place at the club so that the chronic gripers can vent their spleen in a written statement, and you will sometimes get fine ideas from this box.

A sad failure of many Southern courses is the lack of a really good practice green. This one item can build more golf interest and good putters than you would imagine. Try to keep your practice green better than your playing greens and you will see more interest in it at once.

On your practice field, a number of large signs will do much toward getting the players to use that area instead of hitting shots onto regular greens and fairways. We use signs each 50 yards and maintain a good teeing surface for wood shots. Paint yardage markers on your signs and they will be doubly effective.

Tips on Sand Greens

Many of the smaller Southern golf courses use sand greens for economy and these surfaces can be made very true and fine if proper attention is given to a few details of construction and maintenance.

The best construction policy is to start with a base of cinders and crushed rock or old bricks under the greens. The surface is built up smoothly with very little slope. When the proper under surface has been laid, a smooth layer of 4 to 6 inches of heavy red clay with a little sharp sand mixed in will give a keen and true surface upon which to spread the final coating of sand.

After the clay surface has set and dried the sand is spread on about 4" thick. In selecting the sand for the greens be sure that the texture is even and that the sand is medium coarse and not the least bit powdery.

Special care must be given to the use of oil on sand greens if this method is to used. I have never seen really successful greens with an oiled surface. works well except in rainy weather, when it gets gummy and out of shape.

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ever, if oil is to be used, get the proper grade from your oil company and use it sparingly.

If your course is lucky enough to have water piped to the greens you can keep the greens in fine condition. Water them about once each week and they will remain packed and keen.

For keeping uniform coverage of the sand, use a large wooden rake made from a one by three board, 3 feet long. This tool can be home-made and can be kept smooth and even by occasional use of drawknife or plane. The daily smoothing of the greens is best accomplished by using a piece of old carpet or rug about 3 by 5 feet. On one side of this rug tack a one by two strip and attach a drag rope to this strip of board. The drag will smooth the greens quickly and with very little cost. A caddie may be employed to smooth the greens 2 or 3 times a day at a few dollars per week.

At times on sand greens, small rocks and trash accumulate and cause poor putting surfaces. The best solution for this is to pile the sand and sift it through a fine hardware cloth sifter. After this operation spread the sand back smoothly on the green and drag to a keen surface.

Many small courses in the South having low resources would do well to steer clear of too many sand traps and banks that have to be maintained by hand. Many traps can be planted to grass and the banks can be sloped so that the power fairway units can take them in stride.

Sand greens seem to be easier to keep if they are round in shape. Proper attention on the approaches will give better playing conditions and will give your players better approach work in their game. Steer clear of a trench-like joining line between your sand green and grass approach. By carefully reworking this line, a clean-cut joint can be kept that will allow the ball to be played to the green without danger of bogging down in a trench of sand and heavy grass.

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of the greens are banked to give the player more confidence in playing a bold shot to small sand greens. At this course the joining line between sand and fairway is really smooth and true. A slight rise to the grass of the fairway is kept even and free from bumps. This allows the golfers to use a pitch and run shot in approaching that is really a fine golf shot.

In southeast Alabama many sand green courses are maintained on a budget of less than \$2,000 per year. At these smaller clubs, the tees are kept smooth and soft by using a mixture of sand and clay instead of grass surfaces. Usual outlay for equipment is less than \$800 and the operations of the course are under the direction of a green-committee of local men who use a well trained colored caretaker or a farmer who has been trained in the ways of keeping fairways and sand greens.

The golf course work at your club can be no stronger than the men you have to carry out the actual operation. As the leader, you are charged with the responsibility of training them efficiently. This will take time and effort, but will pay big dividends in the end. Most golf professionals and greenkeepers are experts in human relations. They should be able then to properly train their work crews.

As the years go by, demands made on our Southern golf courses are going to be for better and better conditions. The players want an ever-improving course, and remember, they are not interested in expenses. They are interested in results only. Therefore, we must plan our work so that year by year every condition on our golf course will show continued and steady improvement.

What's New

Acushnet reports that in spite of war, taxes and bad weather, June, 1940 was its biggest month on golf ball sales. Up to July 1st, June, 1939 held the record on high-priced ball sales. June, 1940 has exceeded June, 1939 by 63.5%. Fred Bommer, newly elected president of the Acushnet company, attributes this increase to two or three factors: the out-and-out quality and value of the famous Titleist (for expert use) ball; the introduction of the new

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