



The perfect lie

WHAT A THRILL for the golfer who comes up to the perfect lie! When he does, how he blesses the man responsible for the turf that made it possible.

But all too often the fairway turf lets the golfer and the course superintendent down — and the ball, too. The grass is too soft, or too stubby — or it just can't take the close mowing, the disease onslaughts, the heat or drouth. As good grass goes — *poa annua* comes in.

This year a few favored golfers are going to have that perfect lie time after time. That's because they will be playing on fairways of the one new golf course grass patented by the

United States government. It is Windsor and it's truly different.

Windsor was developed by Scotts. It is the bluegrass mutation that grows the dense, sturdy sod that golfers rave about. It is firm but not stiff and bristly, gives good footing.

Windsor develops perfect *tee-up turf*. And it thrives under constant close mowing — down to a half inch. Grass blades need never again get in the way of the club head. No more "floaters."

That's not all. Windsor loves heat — keeps its deep green color with far less moisture. Windsor tees and fairways took last year's drouth in stride.

Too good to be true? Have the Scotts Professional Turf Counselor fill you in on how Windsor grows the perfect lie. Just drop us a line and he'll be in touch with you.

Facts-of-life about Windsor for the technically minded

WINDSOR is a mutant of *Poa pratensis*. It reproduces asexually by apomixis, with progeny true-to-type. Chromosome count is double that of common bluegrass and greater than that of *any* other variety. Plant patent No. 2364.

Scotts . . . the grass people
MARYSVILLE, OHIO

tees, short, medium and long yardages, interesting hazards, alternate routes for different types of players and relatively large greens. Its general design helps the high handicap player but keeps the game interesting for his more experienced counterpart.

The country club golfer has always wanted the best. It is of importance to realize that a whole new breed of fee and non-equity golfers also seek the best and is willing to pay for it with relatively high greens fees or annual dues.

9. What is the future of profit-motive golf?

Golf has been played in the U.S. for at least 75 years. In Scotland it has been played for more than five centuries. No one can deny that it is an enduring game. With increased family income, the shorter work week and the interest the game holds for all age groups, male and female alike, the future of profit motive golf looks bright. In fact some authorities feel that the golf course needs of the American people will never be met. Nevertheless hard headed business practices are as necessary for success in the business world of golf as in industry.

Outline of Major Cost Outlays Before Opening Golf Projects

I. Real Estate

1. Land
2. Brokerage fees
3. Closing costs
4. Survey and other maps

II. Golf Course

5. Nine, 18 or more holes plus practice areas
6. Irrigation—(a) Source—wells, reservoir, city water
(b) Pump, pump house, power and controls
(c) Pipe and installation
7. Golf Architect's fees
8. Course superintendent during construction
9. Maintenance equipment and course furnishings
10. Maintenance equipment building
11. Maintenance of course from seedling until opening

12. Shelters
13. Drinking water

III. Clubhouse

14. The building
15. Furnishings
16. Utilities — electricity (3 phase), water, telephone
17. Sewerage disposal
18. Probe holes and percolation tests
19. Golfcar storage
20. Architect's fees

IV. Clubhouse Grounds

21. Landscaping — lawns, plantings, pathways, fences
22. Entrance road
23. Parking lot
24. Swimming pool, deck, filter and cabanas
25. Other sports such as tennis
26. Caddy area

V. Miscellaneous

27. Boundary fencing in some cases
28. Highway signs
29. Initial advertising and public relations
30. Legal fees
31. Carrying charges on borrowed money
32. Taxes before opening

Golf Catching Up to Baseball in Japan

Three Japanese visitors to the recent GCSA convention in Cleveland, O. Hirota Yamamuro, a country club manager, Takeo Tsuchiya, golf machinery manufacturer, and Nobuo Makeubo, a golf research scholar, told about golf in Japan. Golf was introduced there about 55 years ago and the first course was built on the top of Rokko Mountain at Kobe, near Osaka. However, most people didn't begin to play until after World War II. Today Japan has about 500 courses. However, it is difficult to build golf layouts because most courses have to be built on mountains and in valleys. Makeubo says, "Sometimes we have to level whole mountains. We have to use very poor soil, so it is very difficult to grow good grass." All the men agree though that while baseball is still No. 1 in Japan, golf is catching up rapidly.



NO DRY SEASON WORRIES

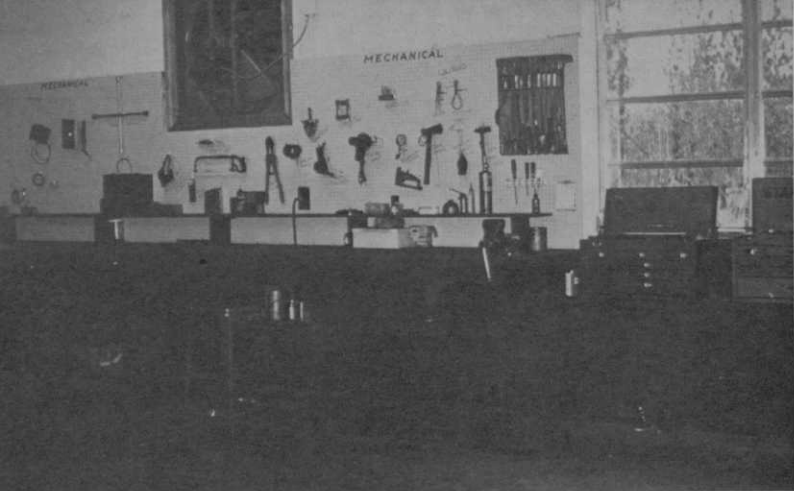
Even in the Sunny Bahamas! A modern irrigation system served by Certain-tee asbestos-cement pipe keeps the championship course at Grand Bahama Hotel up to par. "Right from the word GO, Certain-tee pipe performed beautifully" says Wallace Martin, superintendent and pro at the Grand Bahama course. "Installation was completed on schedule, thanks to the remarkable ease of handling and coupling. We look forward to many years of reliable, trouble-free service . . . and I'm talking about year-round service in this climate." To make any day a rainy day, choose Certain-tee Asbestos-Cement Irrigation Pipe. Write for full details.

"IT'S TOUGH! No flexure breaks at all — even though Certain-tee pipe was installed amid coral rocks!" says Wallace Martin. The group includes (l. to r.) Donald Martin, Assistant Engineer; Joe Pool, Chief Engineer; Boise Miller; Wallace Martin; and Robert W. Holden, Vice President and General Manager of the Grand Bahama Hotel.



Certain-tee Products Corporation

PIPE DIVISION · LEA BUILDING, AMBLER, PA.



Pegboard, widely used for the storage of small tools, does away with the bleak, cement block look of a large part of the CC of North Carolina shop.

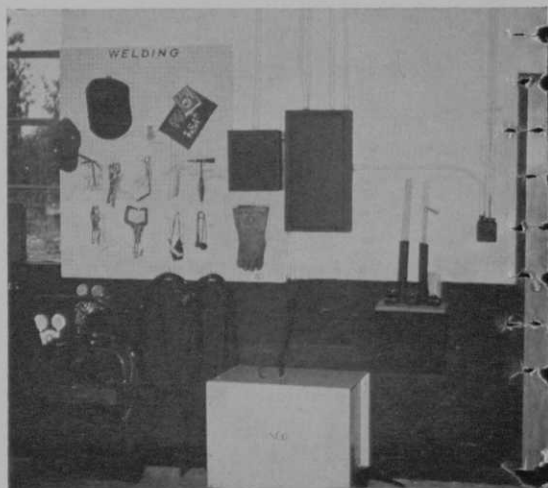
It represents the complete Maintenance Building

Nothing Omitted in Planning of CC of N.C. Shop

By Stan Boraski
Supt., CC of North Carolina
Pinehurst, N.C.

A golf course located in the sand hills of North Carolina, as is the Country Club of North Carolina, is difficult to maintain because of the extreme wear on maintenance equipment. Naturally, the sand causes this wear. Fairway mowers have to be sharpened at least three times more often than units used in non-sandy areas. Greenmowers have to be lapped in many more times than in other regions. Both aerifying spoons and verticutting blades wear out quickly. Most maintenance equipment has to "pull" or work doubly hard in our section and replacement of parts is double what it is in other parts of the country.

To solve this maintenance problem as well as to save money, a complete maintenance building and area were developed



at our club. In developing the special maintenance facilities, club officials, Richard A. Urquhart and Robert C. Fisher, worked very hard to help the supt. promote the building.

In developing a maintenance building to serve the special conditions of the course, the Country Club of North Carolina also sought to have as modern, well-lighted and fully equipped maintenance center as possible. The building that was constructed measures 70 by 100 feet in overall dimensions. There is an attached loam storage section 20 by 40 feet.

Shop Area Heated by Oil

Within the building itself, the overall shop area is approximately 60 by 40 feet. This area is heated by a suspended hot-air oil furnace. The shop contains a car

**Keep fairways in
prime condition -**

AERATE

SLICE

RENOVATE

with the

RYAN

RENOVAIRE



The tractor drawn Renovaire features Ryan's exclusive true contour design which allows each wheel pair (6 pairs in all for a 6-foot swath) to follow the "lie of the land". True contour aerating gives equal tine penetration to the high spots and the low spots to relieve compaction

... to hold moisture evenly and reduce erosion . . . to help moisture, air, and fertilizer go deep into the root zone for healthy growth. To improve your fairways, plan a continuous aerating program. Follow spring coring with regular slicing every 2 to 3 weeks into fall, when you core again or renovate before grass goes into its dormant period. If your tractor has a 3-point hydraulic hitch, ask for literature on the Ryan Tracaire.



◀ See how Ryan units team up to do more jobs: improve those trouble spots on fairways with the self-propelled Ryan Matabay. It controls thatch, thins sod-bound grasses, aerates soggy turf—and is also invaluable for regular greens maintenance use. See your Ryan distributor or write:



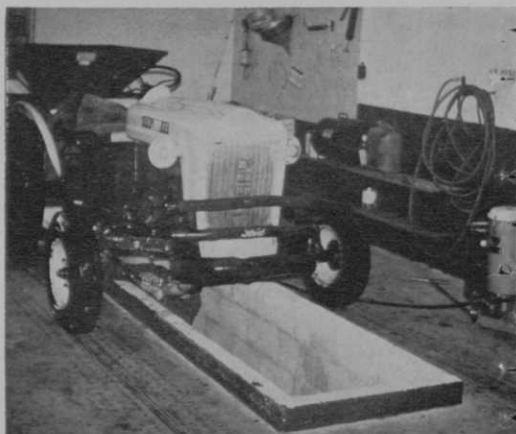
Manufacturers of **WORLD FAMOUS** turf equipment
EQUIPMENT COMPANY

2055 WHITE BEAR AVE., ST. PAUL, MINN., 55109

AERATORS, RENOVATORS, VERTICAL MOWERS, SPREADERS, ROLLERS, AND SOD CUTTERS



So much sand is picked up by equipment at CC of North Carolina that it is necessary to wash and steam clean it more often than at most clubs. Stan Boraski wouldn't be without a grease pit, which is handy for servicing and repairing practically all the heavy machinery used on the course.



wash rack where much of our equipment is washed and, if necessary, can be wiped dry. A grease pit is also located here. It measures 16-feet long by 3-feet wide and 6-feet deep, with descending steps. This makes it possible to service practically every piece of equipment owned by the club. A grease pit and car wash makes it easy to keep up with regular oil changes, chassis lubrication and cleaning in all types of weather.

All the Conveniences

Believing it important to provide conveniences for employees, the building was designed with an adequate men's room and shower room. The club provides towels, soap, etc. The supt. also has a private washroom in addition to his office, which makes it convenient for salesmen and guests.



The toolroom, with adequate shelving, is partitioned off within the shop area. In addition to many special tools we have a complete assortment of bolts, nuts, washers, sheet metal screws, etc. With this large supply on hand many trips to the hardware store are saved. And, while the initial cost of such a hardware stock is large, in the long run substantial savings are made.

Parts Storage System

A parts room is also partitioned off from the general shop area. Adequate shelving here provides for a large inventory. Most parts are stored in boxes. Each box is numbered and the system used for identifying parts is either by type or make of machine. The parts are stored in groups. For example, all tractor parts are stored on one shelf and greenmower parts on another shelf. Close control is exercised here and when any parts are in low supply, more are ordered.

Following the principle of utilizing dead space, we located the air compressor be-

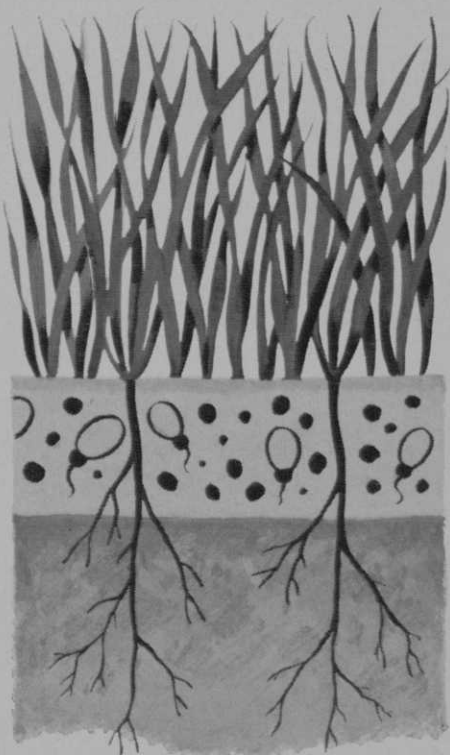
(Continued on page 110)

Club officials showed foresight in providing a comfortable office for the supt. and excellent conveniences for the maintenance staff.

USE...

AZAK*

Selective Pre-Emergence Herbicide



Azak, as indicated by center section, must be applied before crabgrass seeds are ready to germinate. Azak then penetrates seed at time of germination to prevent initial growth.

FOR CRABGRASS CONTROL

AZAK* is Hercules' new crabgrass control designed for pre-emergence application on established turf. Its effectiveness has been proved in commercial use. Available as an 80% wettable powder, Azak 80-WP, it can be sprayed in conventional equipment or formulated by manufacturers into a granular product.

Azak brings to users the combined advantages of effectiveness... persistence... safety to established turf... low toxicity... economy... and practically no odor. Azak is

nonleaching. One application of Azak lasts through the crabgrass germination period. Of special interest to the manufacturer is its compatibility with most fertilizers and pesticides, and its low cost.

Technical information on and availability of Azak pre-emergence herbicide can be obtained from the nearest district office listed below, or from Agricultural Chemicals, Synthetics Department, Hercules Powder Company, Wilmington, Delaware 19899.

HERCULES TRADEMARK



HERCULES

5265-3

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Battery Charging Basically Same for All Chargers

**Replacement is minimized if
daily, weekly and monthly
maintenance checks are made**

(Second of Two Articles)

By EDWARD SZOSTEK

Assistant Sales Manager,
Motor Appliance Corp.

The operational procedure for charging batteries is essentially the same regardless of the type of charger being used. First, determine the specific gravity reading of the batteries (forget this if using an automatic charger) to see what charge remains. Then add water to each cell to the correct level, as recommended by the battery manufacturer. Normally, $\frac{3}{8}$ inch over the plates is satisfactory. Replace the caps, being certain that breather holes are unrestricted. Gases exit from a battery under charge and if the vents are plugged, there is a possibility of a battery exploding from the pressure build-up.

If you have a 36-volt charger for a 36-volt car, you can connect the charger to the batteries. As a safety precaution, it is recommended that the charger be in the Off position at the time of connection.

With the polarized connectors being used today, a reverse polarity or reverse connection should not exist. It is recommended however, that when batteries are installed a check be made for proper connections. Chargers are equipped with safety overload circuit breakers or fuses. However, a few minutes visual check will catch any incorrect connections and avoid the probability of blowing the fuse or the circuit breaker.

The charger is then ready to be turned on. After the charge period, normally 12 hours, check the specific gravity of the batteries. If the batteries are not fully charged, extend the charge period. It will

not harm the batteries to have the charger remain connected after charge as there is little or no feed back.

Program Necessary

A good maintenance program is essential and can save battery replacements. Recommended daily service is as follows: In the morning, test the state of charge either by checking percentage on the charge meter or by checking one or two cells with a hydrometer. Give low batteries additional charge if required. In the evening, check the gravity or voltage for state of charge. Also check one cell for level of electrolyte. If the level is low, check all cells and add water where necessary. Then check the connections and place the batteries on charge.

A weekly maintenance practice should consist of filling all cells to full level. Clean the batteries, also, making certain that vent caps are tight. In cleaning use a stiff brush, baking soda solution and clear water to remove dirt and corrosion. Let the batteries dry and place them on an equalize charge to bring all the cells to the same level of charge.

Recommended monthly service is a bit more involved. After equalizing the charge, test the batteries and record the gravity readings of each cell. Correct the gravity readings to temperature if possible. This permits adjustment of the hydrometer reading so as to have the same basis for comparison time after time. When the battery is warmer than 80 degs. F add 4 points to the specific gravity reading for each 10 deg. rise in temperature. When it is colder than 80 degs. F subtract 4 points for each 10 degrees.

Analyze Data

Analyze your records. A 25 to 40 point variation in specific gravity reading for the cells of one battery indicates a weak cell and the battery is not fit for further service. Low specific gravity in all the cells indicates insufficient charging, and the batteries should be placed on charge.

Some trouble signs to watch for:

1. If the electrolyte overflows, — the batteries have been overfilled.
2. If ON charge temperature is over 120 degs. F, the charge rate is too high. Reduce the charge rate or



**"One application of TURF-CIDE
controls insect
problems on greens and tees.
It has residual
build up in soil for
long lasting protection!"**

— Ed Godwin

Superintendent, Country Club of Birmingham

NATIONAL CHEMSEARCH

Just like Ed Godwin...every year more and more of the country's leading golf club superintendents are discovering that National Chemsearch is the leading supplier of chemicals specially formulated and prepared to keep golf courses in championship form.

Ed Godwin uses and recommends **TURF KING**, the fast working, liquid fertilizer with Deepenol 60 for deeper penetration. **FERATE**—liquid iron chelate for quick greening power, excellent for before-tournament applications to grass and turf. **C-A-D**—Fungicide, eliminates Snow-Mold, Copper Spot and Dollar Spot... long-lasting and powerful. **TURF TONIC**—helps promote healthier, denser turf. Contains Deepenol 60 for more effective penetration. **DEEP KILL**—eliminates weed problems faster because of special deep-killing action. Ideal for controlling Crab Grass, Chick Weed, Clover and Ground Ivy. **CHEM-ESTER 123**—the all-purpose weed killer specially designed for use on golf courses... effective on all kinds of turf.

All National Chemsearch turf products are in compatible liquid form... can be mixed with each other to make both an economical and powerful combination spray. Chemsearch turf products save time and money.

Looking for an answer to your golf course maintenance problems or... other maintenance problems... call or write National Chemsearch and one of our highly trained representatives will help you find that answer. We have the experience... we've been solving maintenance problems, through research, since 1919.



Ed Godwin

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turn charger off and let the batteries cool.

3. Batteries not fully charged — the charge rate is too low.
4. Insufficient power: Batteries may not be charged. Check for bad connections, an accumulation of corrosion, a poor contact in switches or battery terminals. Check the motor brushes for wear.

Short battery life may be caused by:

1. Overcharging — excessive heat damages plates and separators.
2. Undercharging—batteries remaining discharged may lead to sulphation, damaging positive plates.
3. Low Electrolyte — high acid concentration damages plates and separators.

Maintaining batteries in the off season has been a problem in the past. Batteries are perishable and lose approximately 3 points specific gravity per day at 100 degs. F and ½ point per day at 50 degs. F. To make certain that your batteries are in good state of charge, it is recommended that you check batteries every 30 days with a hydrometer. If the readings are between 1.230 and 1.260 the battery is all right. However, if the reading is 1.230 or under, it is recommended that the batteries be placed on charge. Normally a 6-hour charge will be sufficient.

Several Methods Available

Several methods for converting alternating current to direct current for battery charging are available. These are AC motor generators, tungar bulb-type rectifiers and the dry disc-type rectifier. The most prevalent in golf car charging are selenium rectifiers and silicon diode rectifiers. (Rectification, of course, is a method of changing AC to DC.) Trickle chargers are not suitable for heavy-duty golf car application. Constant current chargers are not readily available for golf car service.

There are several safety precautions in charging that should be remembered. Flammable hydrogen and oxygen gases are by-products of battery charging and good ventilation is essential. Don't work on batteries or disturb connections when the charger is connected and ON as sparks

National Golf Day On Television May 31

The National Golf Day Round of the Champions will be telecast live and in color nationally on May 31. Oldsmobile will sponsor the telecast from the Laurel Valley GC, Ligonier, Pa. The event will be carried over NBC coast-to-coast from 5 to 6 pm, EDST.

The PGA champion Bobby Nichols and the current National Open champ, Ken Venturi, will play an 18-hole match with \$10,000 going to the winner. The loser will receive \$5,000.

Beginning May 15, any golfer — man, woman or child — may play an 18-hole round at his or her course with a minimum contribution of \$1 to the PGA for the National Golf Fund. The local pro will certify scores. More than one round may be played and the best score submitted by all players who enter Golf Day competition. The scores are matched against the winner's score of the Nichols-Venturi match. Individual golfers who defeat the winner will receive a 'Beat the Champ' award from the PGA.

may be created that can cause an explosion. Ground the car before working on it. This will eliminate static electricity. If any electrolyte is splattered, wash it out with plenty of cold water. Should you get any solution in your eyes, wash with cold water cupped in the hand and see a doctor.

Good Heads PGA Seniors

Cliff Good, pro at Midland (Mich.) CC, was elected president of the PGA Seniors at the annual meeting of the group in late February. Good succeeds Leonard Schmutte of Findlay (O.) CC. Schmutte was elected honorary president.

The Seniors elected Harry Moffitt of Heather Downs CC in Toledo, O. as first v-p. He will also serve as chairman of the tournament committee. Paul E. Erath of Laurel Valley GC, Ligonier, Pa., was elected second v-p and Denny McGonagle of Elks CC in Hamilton, O. was elected secretary-treasurer.