How are Philadelphia spikeproof carpets doing at the East Lake Country Club, Atlanta?

Great, report club officials, and that goes for the locker room and grill room in addition to the pro shop shown above, all heavily walked on with spikes. These hardy, specially engineered carpets are still beautiful, warm and luxurious—and they have been down for as long as 15 years! Specify Philadelphia carpets (custom woven in your colors) for wherever spikes are worn in your club. They lead in long-range economy and ease of maintenance, provide maximum sound absorbency and protection against falls. Select from one of the industry's most extensive design libraries.

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Please send me a free sample of your spikeproof carpet. No obligation, of course.

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Club_________________________
Address_________________________
City, State_________________________

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mayonnaise and parsley.

Chicken salad for four baskets: 3 cups diced cooked white chicken meat
1 cup diced celery
1 teaspoon finely chopped green onions
salt and white pepper
Accent—to taste
several drops lemon juice and worcestershire sauce, and enough mayonnaise to make salad nice and moist.

Put one cup of solid pressed chicken salad in basket and decorate with fruit. Put a rosette of mayonnaise on top of salad and place strawberry on top. Sprinkle with sliced almonds and place sprig of parsley on basket. Serve on large plate with fancy folded napkin.

ERIC SEAGER, Manager
Olympic CC, San Francisco, Cal.

POACHED MAHI MAHI TROPICANA
Mahi Mahi is a mild fish which is the filet of the dolphin, and a favorite fish in the Hawaiian Islands. It is now widely used in the San Francisco Bay area.

I have had great success by serving Mahi Mahi poached in white wine. I place each portion in an oval casserole and decorate it with seedless grapes and half a peach. This is coated with white wine sauce and glazed with a mixture of hollandaise and whipped cream.

ERIC SEAGER, Manager
Olympic CC, San Francisco, Cal.

IRRIGATION

Continued from page 30

membership was relying on our judgment to create the most practical and simple system, we couldn’t settle for less.

During our surveys one installation contractor warned that the wire sizes and total footage would be so large that the costs would become prohibitive. This scared me, so I quickly put Ohm’s Law to work and found that we could use No. 14 wire for the control wires up to 2,500’ and No. 12 wire over 2,500’. We scaled our footage, and including 25,000’ of spare wire for future extension and insurance, our total footage came to 250,000’.

This came to $3,000 in materials and labor more than the limited multi-pro-
Two ways to wipe out your weed handicap

1. Prevent weeds with Dacthal®. DACTHAL, a pre-emergent herbicide, kills crabgrass and 27 other weeds in fairways, tees and aprons before the seeds germinate. Weeds never get the chance to compete with desirable grasses for needed light, moisture and nutriments. One application lasts an entire season. Safe, odorless, non-irritating to eyes or skin when used as directed. In 24-lb. packages as a wettable powder, the easy-to-apply form.

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Greenskeepers, send for your free copy of The Monster Meets Its Match, an informative booklet that describes your weedy enemies and how to get rid of them. Write today. Diamond Chemicals, Diamond Alkali Company, 300 Union Commerce Building, Cleveland, Ohio 44115.
Continued from page 62

grammer system, but to offset this cost we compared the cost of our one pro-
grammer with the installed cost of 12
to 15 programmers at $400 each plus
the additional cost of fencing or housing
these programmers to keep out vandals.

Our estimates proved correct. Upon
completion, we found that our central-
ized system had cost no more than
the limited multi-programmer system,
with a fantastic increase in flexibility
and reliability. We also realized that
the cost of the limited multi-programmer
system would be far greater than a
central one if it incorporated the same
flexibility and reliability features.

A control valve manufacturer ex-
pressed concern about our getting 24
volts at each solenoid valve, since we
had wiring runs of from 50' to 3,300'.
I devised and built a “black box” that
automatically balanced each circuit and
instantaneously compensated for any line
voltage variations at the power utility
lines. Having worked for a power utility,
I was aware that over-voltage could be
as damaging as under-voltage.

One green superintendent we inter-
viewed had reservations about the oper-
ator being able to correlate all switches
on all his programmers with all the
sprinkler heads on the golf course. This
prompted our use of the color-graphic
control panel with the layout of the
course to scale and in color. Different
colors or shades were used for greens,
tees, fairways and traps.

A numbered plug-in jack at the exact
location of the sprinkler head was used
to terminate the control wire from each
sprinkler head. The plug-in jacks were
color-coded to identify the sprinkler heads
for tees, greens and fairways. This color-
graphic technique used “human engineer-
ing” principles so that unskilled labor
can operate the control center. These
principles are also used throughout.

Circuitry of the central electronic
programmer is “adaptive” so that any
modification or addition can be made
Continued on page 66

what you do this FALL
will determine your turfgrass next SPRING!

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West Point, Pennsylvania

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Eats away unnecessary cost of removing stumps

Davey's whirring Stump Cutter is the fastest, thriftiest way of all to make unsightly stumps disappear.

It grinds up stumps of any size, removing them below ground level. Can be quickly sodded over. Using Davey special equipment, you eliminate the cost of owning and maintaining it. Plus the cost of experienced operators to run it.

This is an example of how you remove the high cost of possession of special equipment needed for your tree care. This happens every time you have Davey's experienced, trained crews use any Davey equipment. Don't risk expensive trouble using untrained, often uninsured, help.

Our experts work fast and efficiently. They are trained to avoid damaging personal property, and always have the promotion of your good public relations in mind.

Here's a good way to eliminate the expense of uprooting big stumps. Now is a good time to arrange for removal of hazardous trees, including unsightly stumps.

Write direct to J. W. Joy, Sales Manager

DAVEY TREE EXPERT CO.
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The Oldest and Largest Tree Saving Service in the World

For more information circle number 184 on card
IRRIGATION

Continued from page 64

without upsetting the basic circuit. Only one timer is used with day, hour and minute settings in five-minute increments. There is a pre-start signal adjustable up to three minutes before the main signal is to start, which could be used to warn late golfers that the sprinkler heads are about to be activated.

More than 20 sequentially timed circuits are available, each variable from five to 60 minutes. Each circuit is capable of handling up to 10 control valves, and more can be added if required. A manual circuit selector is available, and several circuits can be used to water certain areas two or more intermittent short periods instead of one long period.

The entire program can be recycled one or more times to give light waterings instead of one long heavy watering. Any sprinkler head can be added or removed during the automatic operation without disrupting the sequence of operation. At each green we have a switch independent of the electrical system, which activates that green at the flick of a switch. In addition we have a manual quick coupler at each green for manual syringing. Manual switching stations at elevated locations can be added later for manually controlling greens, but we have as yet found no need for this. For syringing greens during play we use a walkie-talkie system with one man roaming the course radioing instructions to another man at the central control center, who operates a series of switches with timers to keep track of the syringing time at each green. We thus keep interference with play to a minimum.

Our superintendent, Sid Brown, asked for a memory circuit to indicate the last circuit to operate and the time remaining on this circuit upon tripping of a pump safety relay. This feature was easily incorporated, and we added a time remaining indicator for the circuit in operation. All switching contacts are

Continued on page 68

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keeps courses tidy year around, handles the leaf problem, permits play all thru Fall Season.

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You'll do up to ⅓rd less watering... have greener, better-playing greens... when you keep your greens well aerated with the Ryan Spikeaire during hot, dry weather. The Spikeaire cuts through the thick, hard crust that forms on the soil surface, making tiny openings that relieve the surface compaction and let water soak directly into the root zone instead of evaporating or running off on the surface. The Spikeaire covers up to 24,000 sq. ft. per hour, transports at 3 mph on permanently attached wheels. A touch control trigger automatically raises or lowers the reel... and differential action on the rear wheels makes turning easy. Spiking is deep (2½" max.) and thorough—there are 14 spiking discs mounted less than 2" apart on the reel, and a choice of 8 or 13 spikes on each disc.

See how Ryan units team up to do more jobs: To get maximum results from aerating, follow it up with uniformly distributed applications of top dressing, turf builder or fertilizer. The easy-to-operate, self-propelled Ryan Spread-Rite handles all these materials... big capacity, 11 cu. ft. hopper feeds them evenly, damp or dry, over a full 39" swath. See your Ryan distributor or write:

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Irregularities in the glass were due to the glassmaker's forcing the molten glass into the mold. The irregularities were caused by the glass maker's pushing too hard or by the mold not being properly lubricated. The bubble in the glass was due to air trapped in the glass during the manufacturing process. The glass was not properly degassed before it was blown into the mold.

The untimely death in a plane crash of one of the game's most colorful stars is particularly sad in an era when often the only way to identify a player is to read the name off his bag. The gap Tony Lema has left in the PGA ranks will be indeed hard to fill.

Tony was born in Oakland, Calif. on Feb. 25, 1934, and started in golf as a 13-year-old caddie. After his discharge from the Marines in 1955 he took a job as shop assistant at the San Francisco Golf Club. While at the club, he qualified for the U.S. Open at the age of 21.

Lema joined the Tour in 1957, but did not break through to the top until 1962, when he won four tournaments. The best vintage year for Tony was undoubtedly 1964. He won the Bing Crosby, the Thunderbird and Buick Opens, the British Open and finished the season by taking the $50,000 first prize in the World Series.

Tony's wife, the former Betty Cline, whom he married in 1963, died with him in the Illinois crash several hours after he had competed in the PGA Championship at Akron, O.

IRRIGATION

Continued from page 66

conservatively rated and are located in a low-moisture atmosphere for long service. We also added a quick changeout terminal strip to change out the programmer in case of trouble, since none of our green crew is an electrical technician. We also carry a spare programmer, and any radio repair shop can repair it because only one electronic tube is used. The entire program schedule of sprinkler heads can be set up by use of plug-in jacks in a half hour. Once the program is carefully thought out and set up, there is no need to change it. Future provision for adding pre-programmed printed circuits for rapid change of sprinkler sequence is provided.

We have provided the superintendent's house with circuitry so that when any safety relay is triggered, an alarm is sounded and he can take appropriate
Golf Course Planning Publications

"Planning Information For Private Golf Clubs"—$7.50 Postpaid

An authoritative publication of current facts, statistics and other pertinent data concerned with the initial planning, construction and actual operation of the private country club. Specifically it includes "Guide Lines for Planning and Organizing Private Golf and Country Clubs," the latest statistics on golf course growth in the United States, "Planning and Building the Golf Course," specifications for golf course construction, a list of golf course architects, a sample construction contract, a suggested list of course maintenance equipment and course maintenance costs studies. Also are sections dealing with the clubhouse, club by-laws, securing a golf professional, membership campaigns and actual case histories on the planning, construction and operation of private golf clubs and in addition a statistical survey on membership costs, dues, transfer fees, locker fees, bar and dining room operations, golf cars and the golf professional.

"Organizing And Operating Public Golf Courses"—$7.50 Postpaid

A reference book of sound and pertinent information on organizing and operating public golf courses. It contains the most current data available on the initial planning procedures and methods of operation that are so vital to the development and successful operation of any public golf course. Included are chapters concerned with the project's feasibility, selection of land, consulting a Golf Course Architect, preparing a construction budget, methods of financing, and a statistical sampling of public golf course operations which covers such areas as, season attendance, operating costs, receipts, season tickets and green fee charges, reservation policy, powered golf cars, hand carts and the pro shop. Other sections deal with golf course policy on regulations and conditions of play at courses throughout the country, course maintenance, the golf center, pro-shop operations, golf course personnel requirements and suggestions for organizing public links golf clubs.

Free information on other golf course planning publications available on request

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action. Provision is also made for starting and stopping the irrigation system manually from the super’s house.

Moisture indicators are installed at several locations and at several depths to indicate a representative moisture content of the soil. Time settings on the programmer can be adjusted to maintain ideal moisture content and depth.

Since water pressures exceeding 150 lbs. psi will damage valves and fittings in most piping systems, shock pressures above this value must be controlled. We used larger pipe sizes to reduce water velocity to 3'-5' per second. For a small increase in pipe cost we got the bonus of less pumping costs due to pressure loss, less erosion of pipe walls, more ideal pressure at the sprinkler heads, and we can operate several heads on one hole for special situations.

We arranged our piping so that the 50°F. well water could be used in the clubhouse air conditioning system prior to being used for the golf course.

To match and complement our revolutionary design for the irrigation system, we devised an equally advanced automatically controlled pumping system. We connected to a nearby natural gas main and installed a natural gas-driven engine on our deep turbine well pump.

This gave us two fantastic bonuses. First, we developed a special modulating pressure control system that throttles the engine to speed up or slow down to maintain a constant water pressure throughout the entire range from zero to maximum flow. No surges or shock pressures are put on the system, eliminating the need for a hydropneumatic tank. We are able to maintain a higher pump pressure for sprinkler heads in remote locations or high elevations and lower pressures for those closer to the pump or on lower elevations.

Second, during the period when our system is in full operation, our average pumping cost is less than one cent per 1,000 gallons of water pumped.

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