

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



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

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SUMMER RECIPES

Continued from page 60

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 Ohms 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-

Continued on page 64



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 nutrients. 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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DACAMINE post-emergent herbicide. DACAMINE packs the punch of an ester, yet it's safe as an amine. It kills weeds like pulling them by hand. DACAMINE is a concentrate that goes to the roots to kill. No special equipment is needed to spray. In one or five-gallon cans.

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.



Diamond Chemicals

For more information circle number 137 on card

IRRIGATION

Continued from page 62

grammer system, but to offset this cost we compared the cost of our one programmer 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 centralized 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 expressed 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.

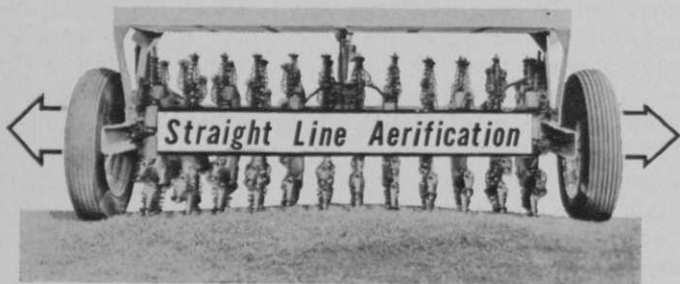
One green superintendent we interviewed had reservations about the operator being able to correlate all switches on all his programmers with all the sprinkler heads on the golf course. This prompted our use of the color-graphic control panel with the layout of the course to scale and in color. Different 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 engineering" 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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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

LO-BLO, the Air-Broom[®]...

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



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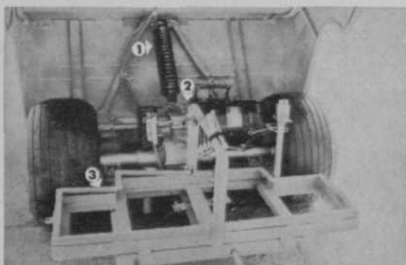


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"Champagne" Tony's death is great loss

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

Continued on page 70

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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IRRIGATION

Continued from page 68

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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