

**With
enemies
like these,
who needs
friends?**

You do!

... friends like Elanco's Balan®

The pre-emergence herbicide that zeroes in on annual weedgrasses to eliminate them from established turf . . . by keeping them from ever getting started!

The same hard working effectiveness can be had for a wide spectrum of weeds in ornamental beds with **Treflan®**, another member of **Elanco's** weed control crew.

Ask your distributor salesman or Elanco representative to help you plan a complete weed control program.

Elanco Products Company

A division of Eli Lilly and Company, Dept. E-455
Indianapolis, Ind. 46206, U.S.A.

**Treflan
Balan**



(Treflan®—trifluralin, Elanco)
(Balan®—benefin, Elanco)



Q—We pump our irrigation water out of a creek that is very high in sodium. How will this affect our turf?
(Michigan)

A—Depending on the concentration of sodium in the creek water and the rate at which water is used you might anticipate a gradual reduction in turf quality. If your soils are very well drained there is the very good possibility that the sodium will be flushed away with the drainage waters. One good way to keep sodium moving is to provide calcium ions through the application of limestone.

Reduce, do not remove

Q—What is the best way to remove thatch from putting greens with one-half inch accumulation? Also, on fairways with about 1½ inches accumulation?
(Indiana)

A—One-half-inch accumulation on greens I would call "cushion" which improves the playing quality. Don't try to remove it. Just punch it full of holes to let water, air and nutrients into the rootzone. On fairways you must aerate to get water through the thatch. Since you did not specify the

kind of grass you have or anything about your management practices, I am in the dark. We know that applications of limestone help to reduce thatch. Vigorous aeration also will help. Avoid excessive irrigation and nitrogen feeding, both of which contribute to thatch. Biological decomposition should be your goal. Mechanical removal is risky.

Q—In the past you have written about using potassium sulfate (K_2SO_4) on turf whenever potash is needed. Can you bring us up to date on potassium sulfate and give us reasons for using it?
(Virginia)

A—There is no need here to elaborate on the advantage of keeping potassium levels adequate in turf—we are all too aware of the troubles we have when potash is inadequate. The principal advantage of specifying potassium sulfate for turf is that each 100 pounds of this product yields 17.6 pounds of sulfur, a macro-nutrient which is deficient in many areas especially where nitrogen and phosphorous are used in quantity. Yes, potassium sulfate costs a bit more than muriate of potash, but the value of the sulfur more than compensates for the slightly higher cost. Sulfur is essential

to plant growth. The need for sulfur is closely related to the amounts of nitrogen being applied. It is essential for many biological processes in green plants. Turfgrasses have improved color and density when sulfur is balanced with nitrogen and other nutrients. Sulfur aids in enhancing winter hardiness, drought tolerance, decomposition of thatch and control of insects and diseases.

You may be sure that, when I have a chance to make a recommendation, I specify sulfate of potash to be very sure that my client's turf will not suffer from hidden sulfur hunger.

Q—We have been advised to plant our sandy loam fairways to a mixture which contains Prato, Delta, Pennlawn fescue and Pelo perennial ryegrass. Forty-five per cent of the mixture is Pennlawn. Doesn't that seem to be excessive?
(Vermont)

A—Forty-five per cent Pennlawn in a bluegrass mixture does seem to be rather high. In the mixture suggested 25 per cent Pennlawn ought to be ample. I question the use of Delta bluegrass when there are better turf bluegrasses on the market. Was the salesman's recommendation based on fact or fancy? □

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BLENDS WITH AND BECOMES PART OF THE TURF
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Cutting Height as Low as....

$3\frac{3}{8}$ "

Frequency of Cut as Close as..

$1\frac{1}{2}$ "

10 BLADE HIGH SPEED REEL: For the finer groomed creeping Bent in the North and the new improved fairway Bents and Bermudas in warmer climates.

EVEN DISTRIBUTION OF CLIPPINGS: With new scraper-deflector, grass clippings are evenly distributed, eliminating bunching, dropping and windrowing.

PREVENTATIVE MATTING AND THATCH CONTROL: Presents a preventative control of thatch and matting by cutting as low as $\frac{3}{8}$ inch with a $\frac{1}{2}$ inch frequency of cut.

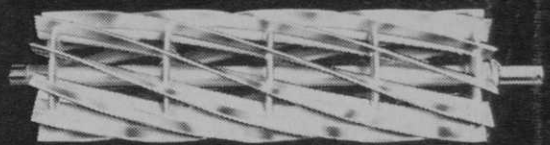
ELIMINATES SCALPING ON MOUNDS: The 26 inch cutting swath of each unit gives greater flexibility. No "ribbed appearance." Smoother, more uniform cut.

AVAILABLE in Hollow Roller or Rear Wheel Drive. 3, 5, 7 and 9 gangs.

Gives Putting Green Appearance to Fairways, Aprons and Tees!



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LO-CUT MOWER



ROSEMAN $7\frac{1}{2}$ " DIAMETER REEL WITH 10 CHROME-NICKEL ALLOY STEEL BLADES



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For more information circle number 185 on card

NEWS OF THE INDUSTRY

USGA conference: the time for change is now

Dr. Fred Grau kicked off this year's seminar session of the United States Green Section Conference by calling for changes in the following areas of turf management.

- The present English measurement system is "archaic"; the metric system is inevitable.

- Turfgrass is behind in tax benefits, and owes a large part of its progress to private funding. Through a unified voice, tax benefits can be increased.

- The pollution problem must be solved.

- The use of sewerage effluent water to irrigate turfgrass areas must be learned to conserve water.

- New methods of mowing must be developed, including the possibility of treating turf with growth regulators to reduce mowing costs.

Other speakers, elaborating on the conference's theme, "The Budget and the Satisfied Golfer," stressed the importance of using new technology to help reduce rising budgets, keeping abreast of developments in course operations, supporting turfgrass research and mechanizing turf operations.

During the afternoon session, Tom Mascaró (below), vice president of Kearney-National, Inc., received the 1971 Green Section Award "in recognition of distinguished service to golf through work with turfgrass."



Harley-Davidson expands sales program

Harley-Davidson Golf Car Div. has added three new district managers, which will "provide more dealer assistance and increased factory guidance for golf clubs and courses in their fleet operations." The new managers are Robert Murray, Warwick, R.I.; David Warren, Fishersville, Va., and Ron Edmondson, Jackson, Mich.

Acushnet to sponsor TV tournaments

Acushnet Company has signed an agreement with ABC-TV, New York, for major sponsorship of four televised golf tournaments next year: the PGA, U.S. Open, British Open and Tournament of Champions. Acushnet's commercials will explain the merits of purchasing golf equipment through pro shops and will feature the Titleist golf ball, woods and irons to an estimated 127,000,000 golf-minded viewers.

DiFini ensembles worn at PGA Championship

For the first time at the National PGA Championship, the official marshals, golf hostesses and scorekeepers wore official ensembles designed exclusively by **DiFini Originals** for this major event. Officials sported bright red slacks coordinated with white and red shirts topped with white orlon sweaters embroidered with the 53d PGA emblem. Golf hostesses and scorekeepers wore red polyester doubleknit pant suits (red vest worn over long-sleeve white nylon shell with slip-on matching pants) with the PGA emblem embroidered on the pocket.

Shakespeare enters ski market in U.S. and Canada

Shakespeare Company announced an agreement with Elan Ski Company to market the firm's complete ski line in the United States and Canada. The Elan agreement marks the entry of Shakespeare into the North American ski market. The Yugoslavian firm is the second largest ski manufacturer in the world.

Shakespeare manufactures golf equipment, archery equipment,

fishing tackle, saddlery, electric fishing motors and other recreational product fields, particularly those involving fiberglass technology.

AMF receives tenders for Head stock

AMF, Inc., has received tenders for about 90 per cent of the outstanding common shares of Head Ski Company. AMF is obligated to purchase all shares properly tendered, and as of January 18, it had paid for 991,952 shares of Head Ski. AMF's tender offer at \$13.50 a share, originally made in December and extended twice, expired January 18. The American Stock Exchange suspended trading in Head Ski on January 15 because less than the required minimum of 150,000 shares was in public hands.

Hahn re-acquired by former owners

Former owners Jack and Lloyd Hahn have re-acquired the **Hahn Div.** of Kearney-National, Inc. The 1969 Hahn/Kearney-National merger ended in December for a consideration "in excess of \$8 million in cash and notes." All of the original Hahn assets, including the Hahn-West Point Div., were re-acquired by the Hahn brothers as was the Hahn-Eclipse Div. and the Hahn Agricultural Products Div.

Everything's OK

The Emblem Specifications Committee of the **Professional Golfers' Assn.** approved **PGA-Victor Golf's** 1972 golf equipment line. Mark Cox (left), PGA Victor president, hosted the day-long meeting with PGA officers (left to right) William Clarke, secretary; Warren Orlick, president, and Henry Poe, treasurer, and other officers of the committee.



(Continued on page 49)

the club pros

They're your hard-working, dependable VERTAGREEN turf fertilizers and herbicides from USS Agri-Chemicals... favored by course superintendents everywhere. To find out how they can make the big difference in the appearance of your course, give your local VERTAGREEN Turf Specialist a call. He's the man who'll tour your course and provide you with a Professional Turf Program specif-

ically suited to the needs of your course. He'll offer you a full line of dependable turf fertilizers like the "club pros" and effective VERTAGARD turf protection chemicals.

To bring out a lush, green appearance in your greens, tees, aprons and fairways, depend on VERTAGREEN Professional Turf fertilizers—the "club pros" from USS Agri-Chemicals.



Tee-Green Tech. Turf Food (50% U.F.)
Formulated specifically for proper fertilization of golf course greens, tees, and aprons in a 4-1-2 ratio, with half of the available nitrogen derived from Urea-Formaldehyde. Also contains guaranteed amounts of calcium, magnesium, sulfur, copper, iron, and zinc.



Vertanite 38-0-0
A long-feeding, slow-acting nitrogen fertilizer derived from Urea-Formaldehyde. Specifically prepared granules for use on greens, tees, and fairways.



Weed & Feed for Professional Turf
Designed for Poa-Annua and Crabgrass control... plus gives you a full fertilizer feeding. Contains Balan,[®] the selective pre-emergence herbicide.



Tournament
Designed and formulated specifically for fairway turf, granulated and sized for use through rotary or drop spreader.



Tournament plus (25% U.F.)
A long-feeding slow-acting granulated fairway fertilizer in a 3-1-2 ratio. 25% of nitrogen content is derived from Urea-Formaldehyde. Also contains guaranteed formulated amounts of calcium, magnesium, sulfur, copper, iron, and zinc.

Score in the 70's with the **USS** Vertagreen Professional turf program.

USS, VERTAGREEN, and VERTAGARD are registered trademarks. BALAN[®] is the registered trademark for Benefin, Elanco Products Company, a Division of Eli Lilly and Company.

For more information circle number 178 on card

Ransomes know about

15 ft. cut Fully-Hydraulic 7-unit Power Gang Mower

Ransomes designers have used hydraulic power successfully for over 20 years.

Plan for profitable large area grass-cutting with Ransomes, the people who know about hydraulic power. The Hydraulic 5/7 has a proven record of a high work output over the last two years and a great record too for rugged reliability under testing conditions.

All gang mowing operations on the 5/7 are handled, hydraulically, with fingertip con-

trol, from the driving seat.

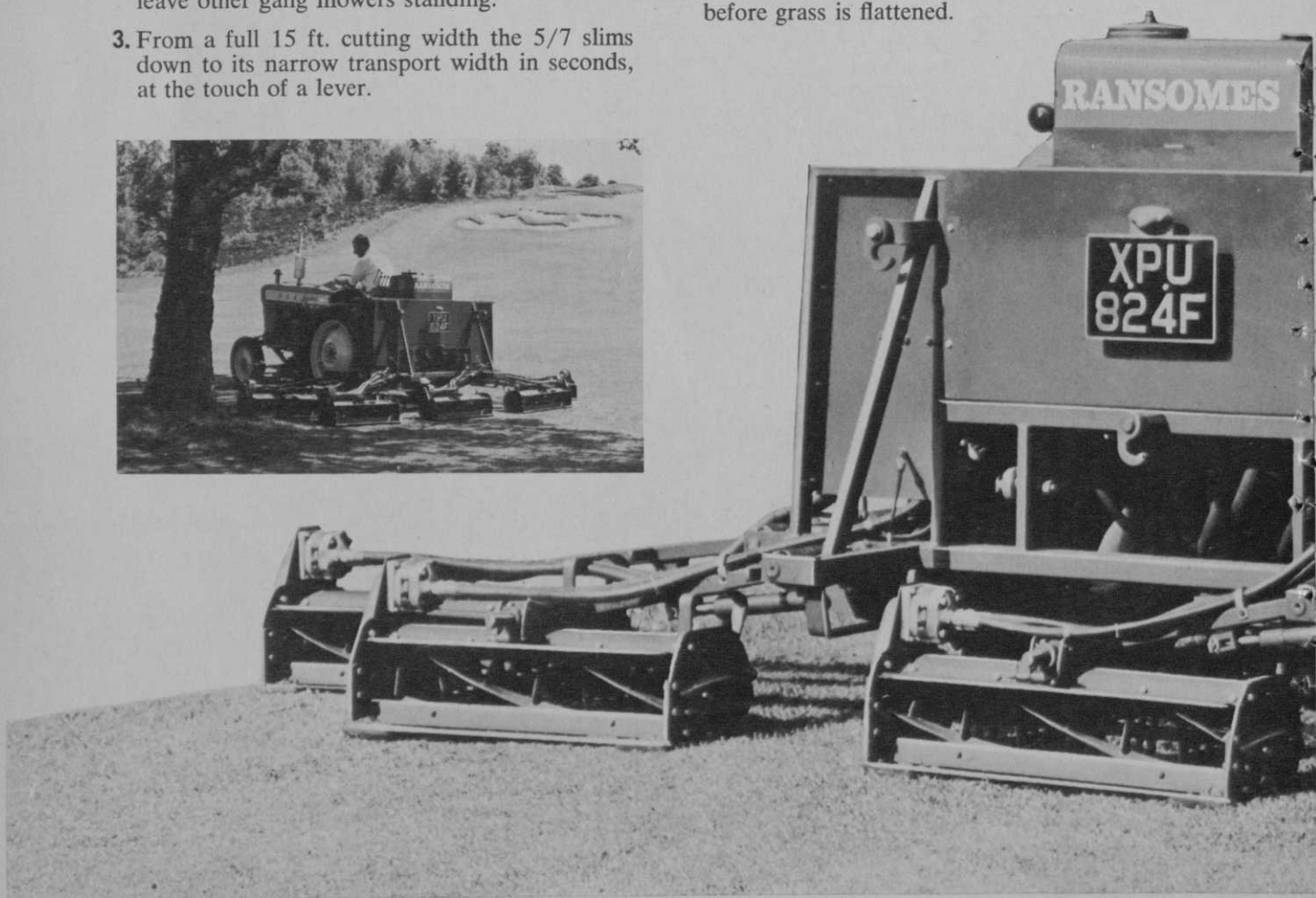
The units are raised and lowered . . . hydraulically. Forward, neutral and reverse reel drive is provided . . . hydraulically. The result is a superb cut every time, and a much easier job for the driver.

We're proud of the 5/7. It's the biggest step forward in large area grass-cutting for 20 years.

And there's no doubt about it.

The 5/7 simplifies the driver's job because —

1. Hydraulic direct transmission gives him power where he needs it most — at the cutting reels. Variable cuts per yard from 20 to 75.
2. Providing the tractor can get a grip he can go gang mowing. The 5/7 cuts in conditions that leave other gang mowers standing.
3. From a full 15 ft. cutting width the 5/7 slims down to its narrow transport width in seconds, at the touch of a lever.
4. Reverse drive clears choked reels and allows back lapping.
5. Hydraulic power allows from 1 to 7 units to be used separately or collectively.
6. Units cut in front of the tractor drive wheels before grass is flattened.



grass cutting...

NEW GREENS MOWER

Britain's newest, best greens mower for perfect turf grooming. Ten high-speed knives of NEW super-tough, impact-resistant steel, together with an extra-thin bottom blade combine to give the closest possible cut — faster with the Auto-Certes.

Dual drive provides complete mower control.

Power-driven wheels provide rapid, effortless site-to-site transportation.

Brush and comb set and outrigger rolls available.

Powerful whisper-quiet engine starts first time—every time.



To obtain full information of the Ransomes range contact one of these importers: —

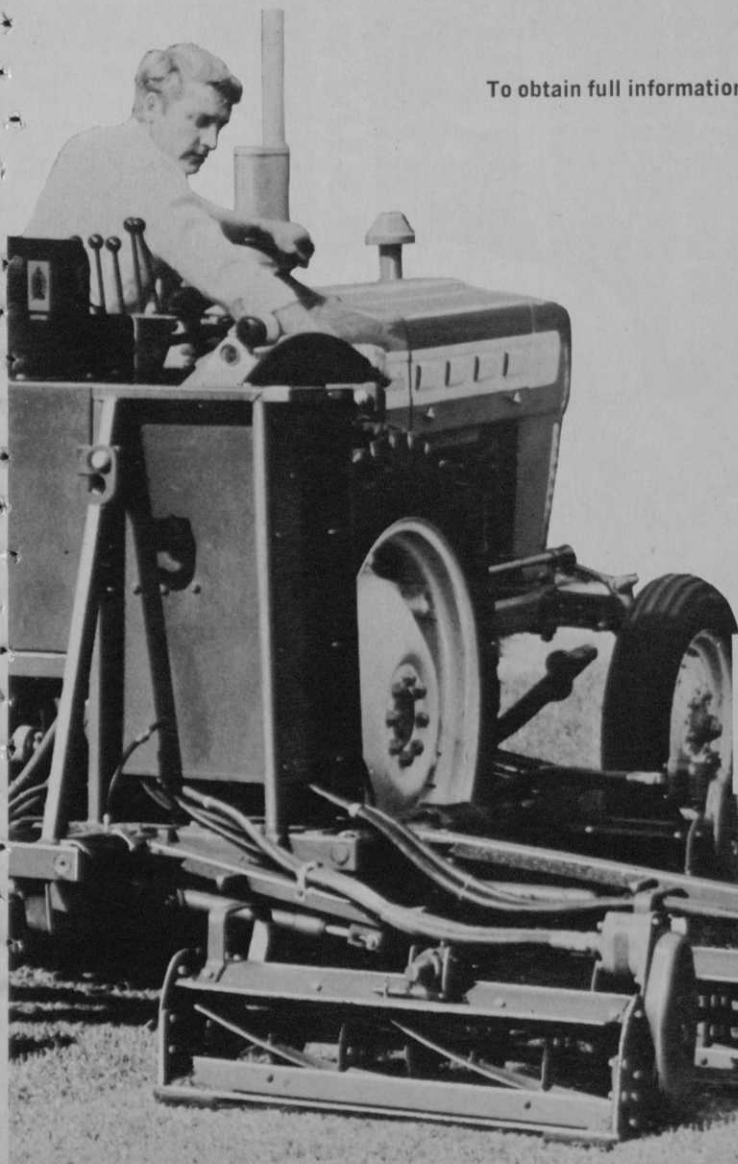
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*Builds
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healthier
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For more than 40 years, Milorganite has been used by golf courses, athletic fields, parks, cemeteries, and home lawns to produce and maintain outstanding turf.

- Milorganite scores better than chemical fertilizers in experiment station tests.
- Milorganite is the best long-lasting fertilizer.
- Milorganite cannot burn, and is easy to apply because, unlike chemical fertilizers, Milorganite's bulk assures proper coverage.
- Milorganite is granular and dust free.
- Milorganite-fed turf needs less water and holds its color longer.

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Golf courses use more MILORGANITE than any other fertilizer

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Chemical industry at crossroads

Speaking at the Texas Turfgrass Conference at Texas A & M, Dr. **David Watson**, director, Product Development Div., Velsicol Chemical Corp., characterized the chemical industry as "at the crossroads of pesticide development." He added, "A frequent question . . . of many prominent companies basic in the manufacture and sales of pesticides is whether or not to continue in the business."

He emphasized the relevancy of the topic to the turfgrass industry because that industry is directly involved, "whether you like it or not . . . the increased cost of pesticides will change the economics of your industry."

Contrary to popular beliefs, the chemical industry will not always be able to produce new and better pesticides because costs have soared and regulatory requirements have become increasingly complex, surpassing those used for drugs for human consumption, Watson continued.

"Chemical producers," says Watson, "are not advocating that everything relative to pesticides is right, but we are saying the problems that do exist can be solved." He added that each pesticide should be evaluated on its own merits or demerits and not according to classes of compounds.

American Hoechst acquires Stauffer interest in Hoechst Polymer Corp.

Stauffer Chemical Company's 50 per cent interest in **Stauffer Polymer Corp.**, Delaware City, Del., has been purchased by **American Hoechst Corp.**, Bridgewater, N.J. The purchase price was not disclosed. The company will be known as Hoechst Polymer Corp.

Stauffer Hoechst Polymer Corp. was organized in 1964 as a joint venture between Stauffer and Farbwerke Hoechst of Frankfurt, Ger. It produces rigid polyvinyl chloride (PVC) film and sheeting, polyester monofilament and polyester tubing.

Toro West Coast distribution undergoes change

Toro Mfg. Company of Minneapolis announced a change in the Cali-

fornia and western Nevada distribution for the company's Moist O'Matic underground sprinkler systems.

The Swanson Company of Fresno, Calif., will handle the 10-county area surrounding Fresno. Distribution for the sprinkler equipment in 12 counties of northern California and for 4 counties in Nevada will be handled by Western Toro, Burlingame, Calif., distributors of sprinkler equipment for the remainder of northern California. The Brady-Holmes Company of Sacramento continues to distribute the institutional mowing equipment for all 26 counties.

Burton changes marketing program

Two major changes in the over-all marketing program at the **Burton Mfg. Company** have been announced. In addition to their own line of golf bags, carryalls and headcovers, Burton will handle the United States distribution for Penfold balls and gloves and Morton Knight golf apparel. Heading up the sales efforts for these new products and for Burton Bags, will be Gene Bowser as vice president, sales and marketing. Bowser formerly was national sales manager of the golf division of Uniroyal, Inc.

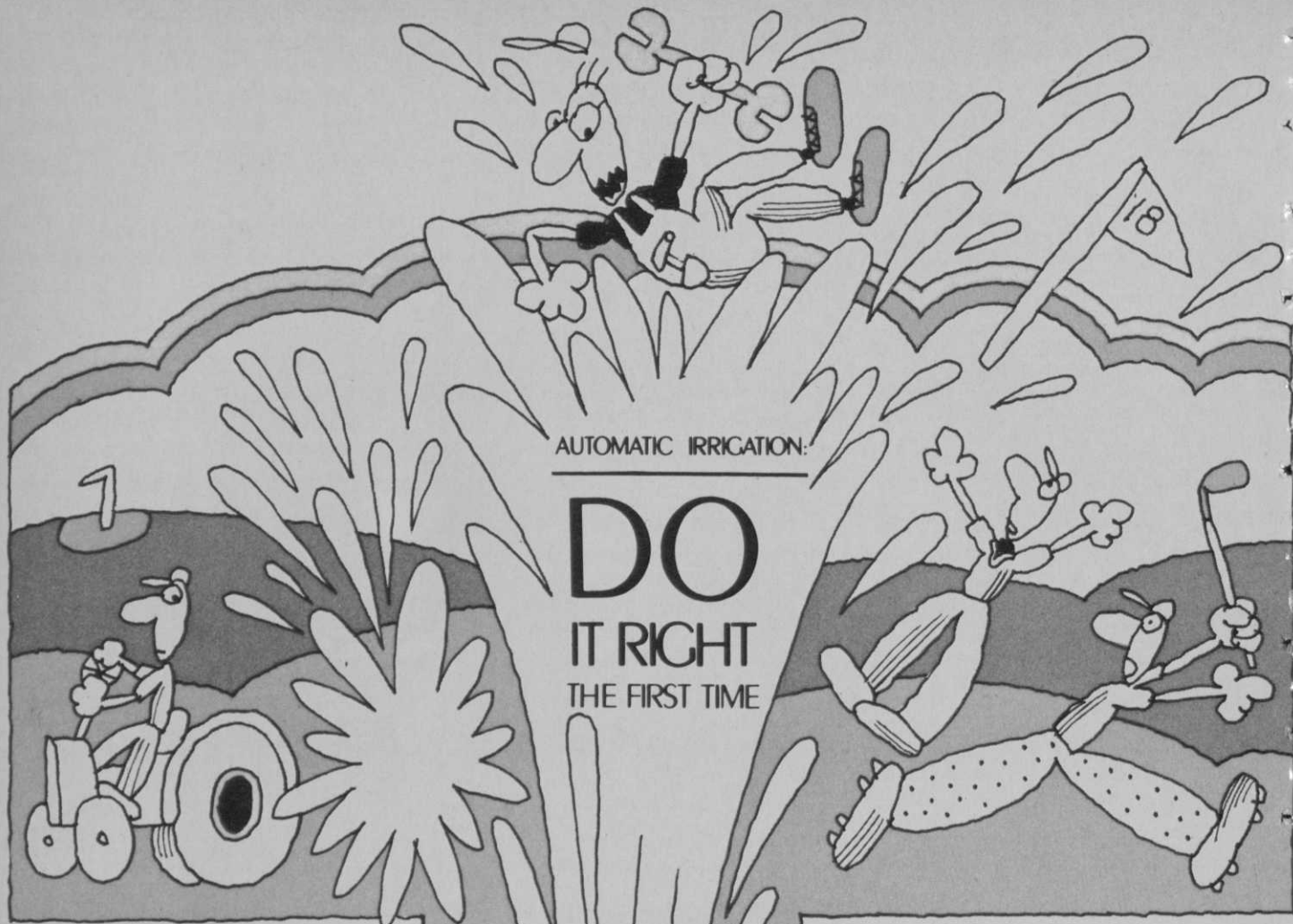


TIRES FOR TURF

The care of the turf is the most important single problem facing both the greenskeeper and the pro! It isn't the "walkers" that make the difference, it's the *riders*. Carlisle—America's largest producer of tires for off-the-road use—treats your turf tenderly by providing a complete selection of replacement tires specifically designed to match your need—golf carts, mowers, trailers, and power equipment. See your Carlisle dealer . . . he knows Carlisle tires, and Carlisle tires know your turf!

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TIRE & RUBBER DIVISION
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For more information circle number 208 on card



Although golf course irrigation has come a long way in the last 10 years, golf courses still make mistakes that cause them problems and waste many dollars. Here are specific examples of what happened to two courses and how they should have approached the problem.

The first golf course decided that they wanted an automatic irrigation system. The information given out to the prospective bidders by the club included the water source, the pumphouse location and a request for an automatic system. The bids were received and without analysis the club awarded the installation to the lowest bidder, who was 20 to 25 per cent below the other two bidders. The contract was drawn up based on the lowest bidder's plans and specifications. Three years later, after much trouble, the golf course asked again for bids on a new system. For some unknown reason, they proceeded with the bidding in the same way as before, but this time items were cut to lower the price so that it was acceptable to the membership.

As a result the club was \$200,000 poorer and no wiser.

The second golf course decided to install an automatic irrigation system, then went to the club members to see what money was available. One member, who was a sewer pipe contractor, told the club that he could buy the materials wholesale and install it with "no problems." The sewer contractor ordered fairway heads, valves, controllers and wire from a sprinkler distributor. He bought the pipe direct. The distributor, without any further investigation, sold the club the items the sewer contractor ordered. Was this a savings to the club?

After the system was installed, which took 10 months, several problems occurred. Valves kept sticking open. Sprinklers would not rotate and were breaking off. Sprinklers would not throw water to desired distances. Pipes were blowing out of the ground. And the control wire was breaking apart.

The valves should have been a different type because of the silt condi-