

New tool for the super

by Joe Doan

When Charles DuPont, aviation manager for Clarke Outdoor Spraying Co. of LaGrange, Ill., hovered over the 18th green one afternoon in the spring of 1967 and sprayed silvery jets of fungicide into the bent, he proved to a dozen midwest superintendents, who watched the demonstration from a vantage point, that turf doesn't have to be lost even though a course may be made inaccessible by flood.

The superintendents watched him as he made fungicide applications on all of Elmhurst CC's putting surfaces and as he treated four or five greens some four or five feet above the ground in his helicopter.

In the Chicago area only approximately 30 of a total of slightly more than 150 courses have tried helicopter maintenance in the 15 months or so that the Clarke company has made it available.

Only three clubs in the area the company operates in (northern Illinois and northwestern Indiana), however, are on a regularly scheduled aerial spraying basis. They are Northmoor and Medinah, near Chicago, and Aurora (Ill.) CC. The first two use the service to keep dollarspot from invading bent fairways and greens while Aurora has its bluegrass fairways treated about every ten days from aloft to suppress leaf spot. Riverside and Elmhurst have experimented enough with fungicide applications and treatments to eradicate Dutch Elm disease to

be rated regular patrons by the Clarke company.

Three clubs, Edgewood Valley, Prestwick and the Village Green in Mundelein, called in DuPont and his flying machine this spring to strafe their fairways with fertilizer. The other 20 or so superintendents who have used the service have done so to demonstrate to their members or green committees how quickly and neatly aerial spraying can be done.

Fairways and greens of a standard 18-hole course can be treated with fungicide, for example, in only 3½ hours. This spring, 650 elm trees at Westmoreland CC in Wilmette were sprayed from the helicopter in four hours. Julius Albaugh, the superintendent there, estimates that if the attack on the elm bark beetle had been mounted from the ground it would have taken two men 14 days to complete the job.

Chuck DuPont honestly feels that the real reason why more than about one out of six superintendents hasn't called him in for a demonstration is the cost factor. At first glance it seems quite high — \$100 for 18 greens, and \$100 for 18 fairways, with a fairly large discount for repeat business. The cost of spraying trees ranges from \$1.15 to \$2.00 per tree, depending on the number sprayed. There is a \$100 minimum for tree spraying.

Still, if the cost of spraying from the ground is closely compared with the aerial method,

the difference is not as great as it first appears, DuPont points out. And, of course, there is the matter of sealing off a course while a spraying operation is going on. The time factor here overwhelmingly favors the aerial operation.

Another thing that greatly favors aerial spraying over the ground application method is the physics of the two operations. Tests with malathion in mosquito control have repeatedly shown the following to be true, according to DuPont. Spray that is stirred in the turbulence created by the helicopter's churning rotors is broken down and vaporized four or five times faster than when a solution is applied by equipment driven along the ground. Thus, a fungicide applied by aerial spraying takes hold this much faster than if it is distributed from a boom pulled along the ground. Because of this great difference in effectiveness it is not necessary to spray so often from the air. The cost savings undoubtedly justifies the use of a helicopter.

Chuck DuPont is not so sanguinary as to want to see a recurrence of such as the great pythium disaster of 1964 that caused so much loss of bent fairway turf on northern courses from the Mississippi to the east coast, but he does feel that it is going to take some kind of an emergency to bring about wider acceptance of helicopter maintenance.

Any company in the outdoor

Department of Agriculture soil conservation service unit comes to the rescue of Sidney, Ohio golf course

'The dam is leaking!'



Erosion of newly seeded golf course can be seen around sand trap, and in filling of road ditch.

Superintendents, if hesitant about asking fellow supers for advice, can go to the local soil conservation service unit of the United States Department of Agriculture. The following is a brief case history of the help the department gave to Sidney, Ohio with its course.

A committee of 20 men, named by the city, obtained an option to buy 145 acres of farm and woodland. Stock in the course was sold to local people to raise the money.

Two summers ago, bulldozers changed the former cropland and woods to fairways and greens.

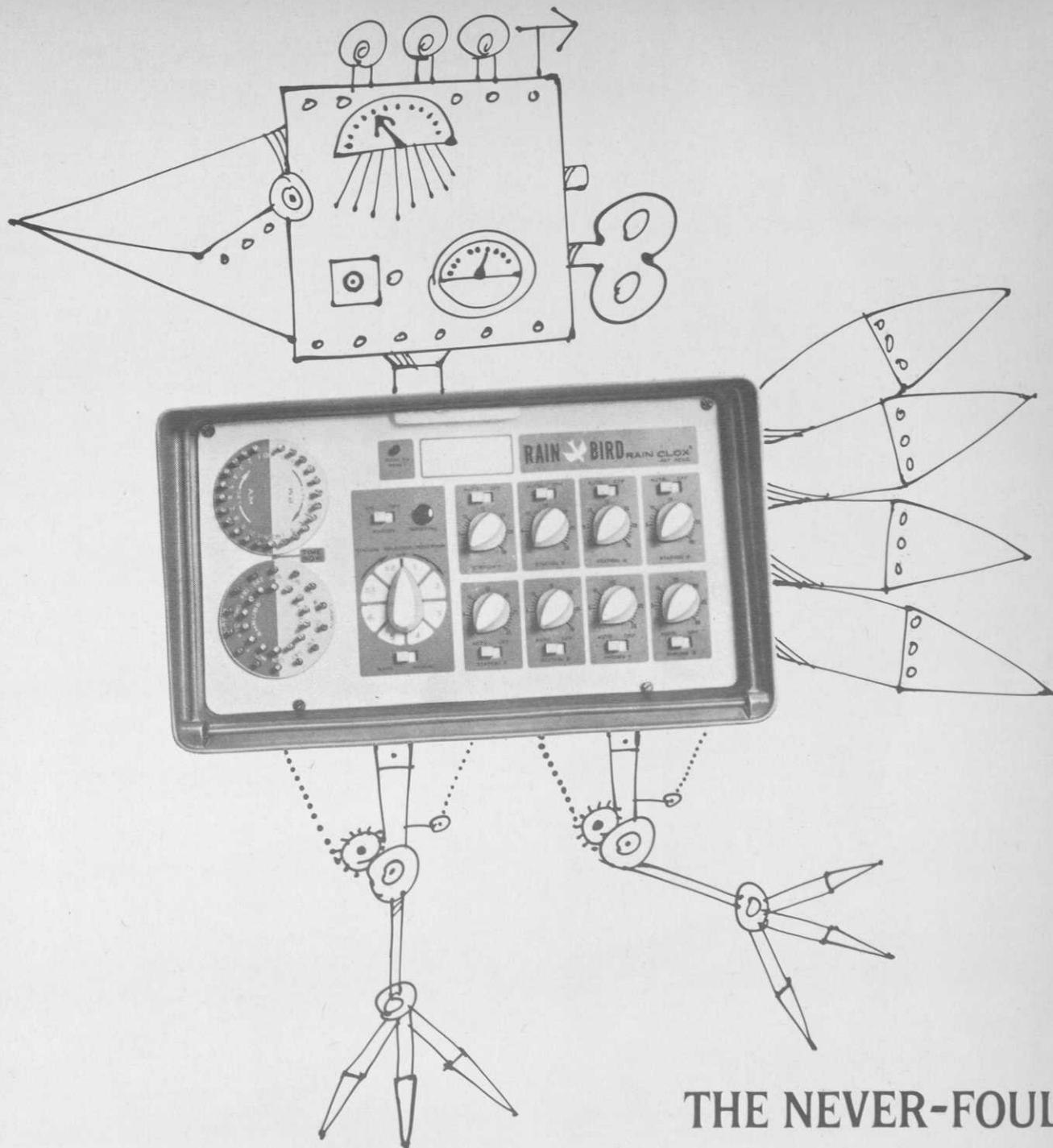
Here the first mistake was made. Inadequate attention was paid to the type of soils being used to develop the fairways and greens.

As the bulldozers reshaped the land, old field drainage tiles were covered or broken, creating a future drainage hazard.

Workers built a 2½-acre pond for irrigation, overlooking storm storage, size of watershed, and soils.

That fall, workers seeded about 100 acres to grass. They used no mulch or cover crop to protect the soil against erosion. They did not sod the main drainage channels.

Continued on page 67



THE NEVER-FOUL

Until businesses are run by robots, no company can claim it is free from human errors. But at Rain Bird we go out of our way to reduce our share of foul-ups. After all, we have a reputation for reliability and we have to protect it.

We start with design, keeping ahead of the market in new ideas for irrigation products that work.

Next, we maintain a large staff of quality control personnel to weed out any goofs in production. They check everything from the quality of the brass we pour, down to the tolerances of the sprinklers (to .001 inch).

And then we make ourselves available

to the professional landscaper for consultation. If required, we'll visit the project site prior to construction to evaluate the problems. We can help figure the budget, and give advice on sprinkler system specifications, piping schematics, and pumping plant details.

We hold regular factory clinics for our installers, so they know which sprinklers to use where; when to automate, and why; and how to economize and on what. Occasionally a Rain Bird product will lay an egg. When it happens, we get a man on the spot before it develops into an omelet.

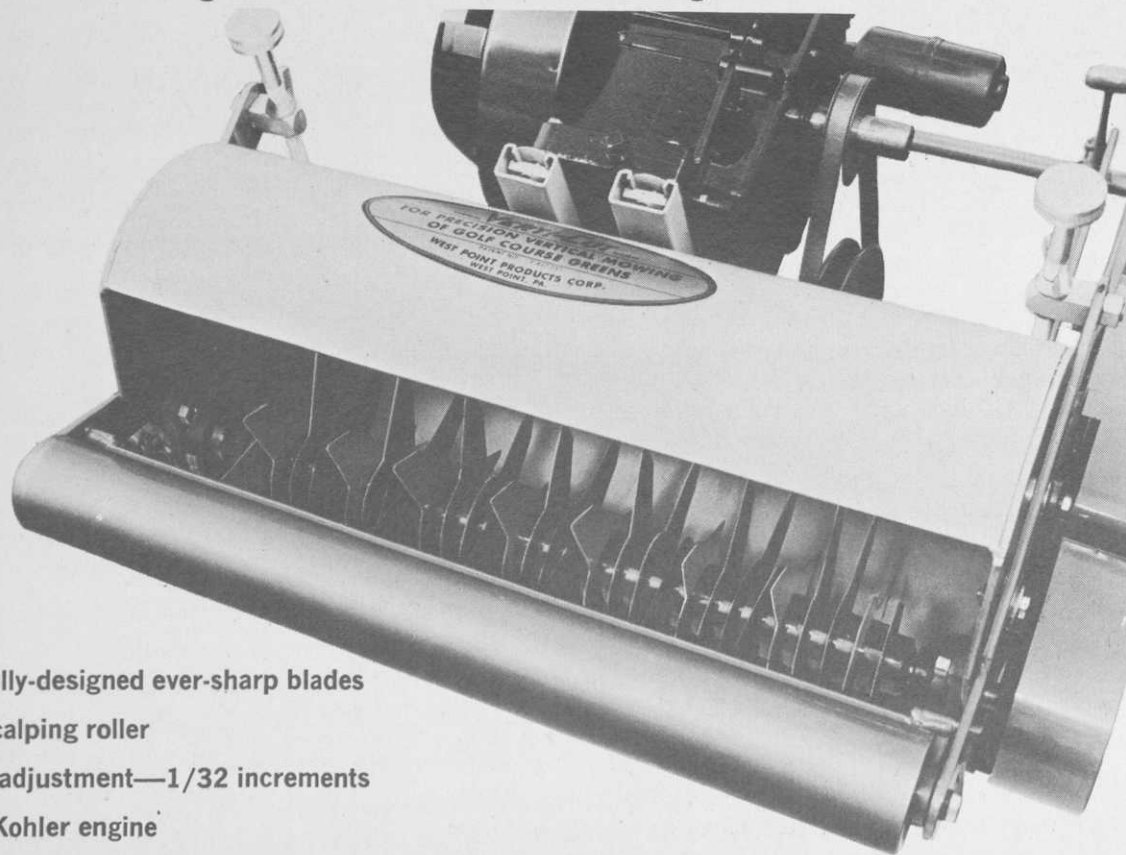
For help on your next sprinkler installation, call your Rain Bird distribu-

tor. You can have his name and phone number by return mail if you write to Rain Bird, Glendora, California 91740



*Do YOUR golfers know that the VC-5 VERTI-CUT® reduces golf scores??

*Grain develops quickly on intensively managed turf. It can deflect the best putts. The VC-5 Verti-Cut® removes "grain" with no disturbance to the grass.



- specially-designed ever-sharp blades
- anti-scalping roller
- finest adjustment—1/32 increments
- 7 HP Kohler engine

Some fifteen years ago, when golf course greens were still being raked by hand to remove thatch, West Point designed and introduced the first Verti-Cut® Mower for greens. Over the years many refinements have been made to that original model. The new model VC-5 Verti-Cut® is equipped with 7 HP Kohler engine.

But the design of the patented blade has remained the same. It CUTS OUT grain and thatch leaving behind it a smooth, superior putting surface.

And while the Verti-Cut® is improving putting surfaces, it's improving growing conditions for the turf. NO plant can

survive if dead and dying plant material is permitted to choke off the plant's air, water, and food supply. The VC-5 Verti-Cut® makes certain that these necessities reach the soil surface.

Make certain to "harvest" the dead material on your greens this fall. The life and health of your turf next spring depends upon it!

And complete the maintenance program by opening the soil with the Vertifier or the Aerifier®. Your turf will respond and produce the kind of turf that is good to play on and that resists drought and disease.

WRITE: West Point Products Corp., West Point, Pa. 19486
Mfrs. of Aerifiers®, Verti-Cuts® for greens, tees, and fairways; and the Vertifier, Power Drag, Aeri-Spiker for greens.

For more information circle number 260 on card

A car for all golfers

by Mel Boldt

Industrial Design Consultant for Cushman Motors

*The needs of the
modern golfer were of
paramount importance
in car's design*

The most functional golf car must, naturally, be built from the golfer's point of view. In this brief case history, the following questions were posed, and then tackled.

1. How can we make the ride as comfortable and safe as possible?

2. How can cleat damage be minimized?

3. How about adjustable seats? Better yet, how about semi-bucket seats with integral hand rails?

4. What can be done to make the game of golf more enjoyable and, in effect, speed up play?

Here is how they were handled.

1. A smoother ride was achieved by lowering the center of gravity on the unit and using steering wheels with a ratio drive on all cars. For safety, protrusions and projections, especially in the entry and exit areas, were eliminated.

2. Since golf shoe cleats present a problem of wear and tear on floor mats and surrounding areas, the solution was found in the use of heavy-duty rubber mats, with carpet on as much of the surrounding area as possible.

3. Seating is a story in itself. The seating on this particular golf car is the result of an almost dogged belief in this seating principle. The seats that developed are integrally formed and vinyl coated. They were not dye cut pieces individually stitched together and filled with stuffing. The seats are of one piece, and integrally laminated, waterproofed, and held to the steel frame with a vinyl extrusion.

With a new frame to work with, it serves not only as a practical construction element, but also as a semi-flushed-in bumper or rub rail. To facilitate easier entry and exit, the seats were slightly angled outward.

4. More convenience to the golfer was the line of thought in solving the last question. Bag storage, as well as storage of personal equipment, was a big factor in the design of the car. Since there are various types and sizes of golf bags, the car was designed to provide several alternate bag mount positions.

As for some specifics about the car, it is fabricated in steel, from bonnet and fenders to rear deck sections and rear well. In production, this permits all joints, seams and fastenings to be handled in the manner of automotive assembly. This, in turn, eliminated the many exposed screws and raw edges prevalent on plastic and fiberglass bodies.

The industrial designers, as evidenced, also took great care to avoid creating a new problem while solving an old one. The result is the modern golf car. □

KLUB-KLEEN

ADDS

PROFIT TO OPERATION SERVICE TO MEMBERS



Vending machine provides 3 minute cycle for a quarter. (Foot switch model available to private clubs on request.)

Powerful rotary scrub gives safe positive cleaning action to irons and woods.

Rugged construction.

Handsome heavy wood grained all weather exterior.

You simply add water and collect quarters.

Std. 110 volt plug.

Open your 1969 season with style and profit.

Price and delivery information on request.

B. & G. MFG. CO.

P.O. Box 551

Essex Jct., Vt. 05452

New products



Turf-Vac, has introduced a unique self-propelled vacuum to be used in picking up grass clippings and debris from sidewalks and other paved surfaces. The unit operates entirely without brushes or other mechanical pick-up devices; its sweeping is accomplished solely by the lifting action of its powerful vacuum system. It can be used efficiently on both wet or dry, paved or grassy surfaces.

For more information circle number 100 on card

Magna American Corp., has announced production of a Amphicat, a six wheel off-the-road vehicle, devel-

oped by Beehoo Industries Ltd., and Mobility Unlimited, Inc. Initial production schedules call for 12,000 units annually. On land the Amphicat can travel at 37 mph and in water two mph. It can carry 480 lbs.

For more information circle number 101 on card



Gold Crest, Ltd. is now providing counter or wall merchandising fixtures to all pro shops. They will be free with purchases of any of their lines of hand-made, gold or silver bullion crests.

For more information circle number 102 on card

Telsco Industries has announced for its Weather-matic Sprinkler Div., a new lightweight, sturdy, valve box for enclosing underground valve installations.

For more information circle number 103 on card



J.I. Case Co., has announced a new King Fork Lift with torque converter and power shuttle as standard equipment. The 580 model has a unique system of "power interception" that gives more control and maneuverability.

For more information circle number 104 on card



Smithco, Inc., has announced the availability of another mobile carrier line. Named the "Ranger-23" this mobile carrier offers a new "step-in-and-out" convenience, and bench-type seats which will seat two or three persons. A variety of canvas tops are available.

For more information circle number 105 on card



Rolatape Corp., has introduced a new measuring wheel that automatically records measurements line to line, wall to wall, around curves, overhead or vertically. Distance is recorded in feet and inches up to 1,000 feet. A reset button can automatically return the counter to zero.

For more information circle number 106 on card

make bushes obsolete

Maintenance is practically obsolete, too. Super Secur Comfort Stations are constructed of durable treated steel, with unbreakable cast aluminum fixtures for long lasting, maintenance-free operation.

A truly rugged building for a golf course, park, playground or any area where heavy use or vandalism is a problem. Feel secure, buy Super Secur!

SUPER SECUR COMFORT STATIONS

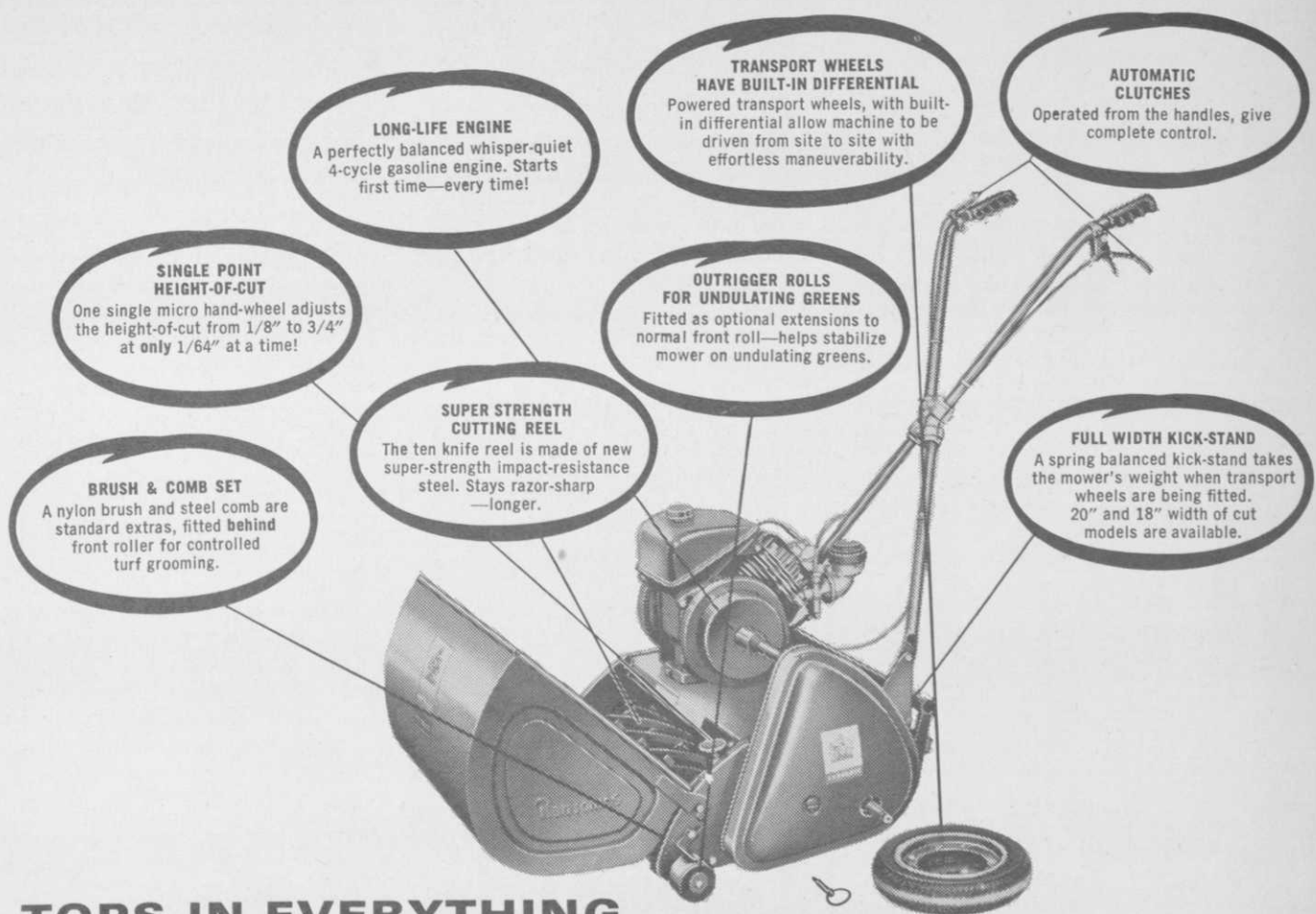
778 Burlway Road • Burlingame, California 94010

For more information circle number 170 on card

NEW Large capacity greens mower

*** Two widths of cut to suit your requirements**

Tailor-made for North American conditions the new Auto-Certes will give a perfect cut to golf greens. Cuts at variable speeds to suit you and your greens—saves time • Light and maneuverable—saves operator fatigue. Replaceable engine parts—saves maintenance costs.



**TOPS IN EVERYTHING
—EXCEPT PRICE**



RANSOMES

for a cut above the average

For more information circle number 263 on card

Demonstrations of this mower can be arranged by:

HEAD OFFICE

Warrens Turf Nursery

8400 West 111th Street, Palos Park, Illinois, U.S.A.

Importers for the U.S.A.

HEAD OFFICE

Duke Lawn Equipment

1184 Plains Road East, Burlington, Ontario

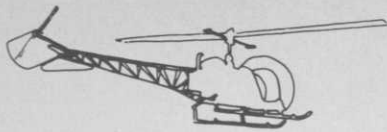
Importers for the Province of Ontario

HEAD OFFICE

Morin Equipment Inc.

2075 Branly (Centre Industriel STE-FOY), Quebec 10

Importers for the Province of Quebec



Copter *Continued from page 51*

spraying business that uses choppers, is set up to rescue golf courses or any kind of acreage where fine turf is cultivated on a large scale, when disease becomes rampant. As Gerry Dearie, the Medinah superintendent who uses the service, points out: "If Chuck DuPont and his helicopter had been around four years ago all the superintendents in this part of the country would have been begging him to rescue them from that big ocean of pythium."

The demonstration at Elmhurst in the spring of 1967 actually stemmed from an emergency situation. Fred Opperman's course was harder hit by flood water than perhaps any in the district, and when the water receded enough to permit inspection of the greens it hardly took a trained

eye to detect that the turf was beginning to choke up with fungus. In spite of his anxiety, Fred consented to hold off long enough on the aerial treatment of his greens so that it could be demonstrated for the benefit of other superintendents.

The present time shows one out of six superintendents merit the fighting of disease by aerial warfare, according to the company. Perhaps an equally large percentage will be converted after another emergency arises, muses Chuck DuPont. He is also convinced that eventually custodians of large turf spreads won't be able to get along without aerial spraying.

If the emergency appeal isn't a convincing enough selling point, there is, of course, the labor dilemma. Most superintendents are so short-handed now they can barely squeeze by handling the mere routine work of the golf course. A sudden onset of a disease may disrupt work sched-

ules for quite a long time if it is necessary to pull men off jobs and throw them into the fight against a fungus attack. At many courses, herbicide, pesticide or similar treatments have to be totally or partially waived because there aren't enough men to carry on the programs. It's doubtful if Julius Albaugh of Westmoreland could have spared two men for 14 days to spray his 650 elm trees.

Superintendents may well come to the realization that it doesn't take a sudden and dramatic emergency, such as is caused by pythium or dollarspot, to make it necessary for them to call for extra spray-power from the helicopters. The manpower emergency should justify their calling for outside assistance.

The Clarke company, except for its three experiments in applying fertilizer, has confined its golf course work to fungicide and Dutch Elm disease treatments. The granular fertilizer applications were made with two centrif-

Continued on page 60



If you haven't thought about specifying plastic pipe for your course's sprinkler system, consider this:

Municipal water systems in all parts of the country are switching to plastic pipe. Because it stands up as well as metal pipe. And installed cost averages 50% less.

A sprinkler system using CRESline PVC Plastic Pipe saves you around half the cost of nearly any other type. It goes in fast and lasts indefinitely. Installation of an 18-hole system takes about 5 weeks, seldom disrupts play.

Hundreds of courses throughout the country are sprinklered the CRESline way (names on re-

quest). It is rustproof, highly resistant to corrosion, available with a full line of fittings—and *guaranteed right* in writing.

Don't let a browned-out course drive your golfers to greener grounds. Look into CRESline PVC Pipe, the logical successor to metal pipe on all counts.

Cres LINE **PLASTIC PIPE CO., INC.**
Member National Golf Foundation

Dept. G-968, 955 Diamond Ave., Evansville, Ind. 47717



“Nearly 9,600 pounds-- and not a mark on the turf!”

“I could hardly believe it when they tested a loaded Champion Doo-All Trailer on our No. 11 fairway,” said Steve Zappe, Greens Superintendent at the Springfield (Ohio) Country Club.

“We had about 12 inches of rain in three weeks. The morning before the test, the course was closed because of standing water.

“I let them run the trailer only in the rough at first, then down the edge of the fairway and, finally,

right down the middle. There was not a mark on the turf — you couldn't even tell where the Terra-Tires had passed. My shoe heels were actually doing more damage than the Doo-All loaded with two yards of sand.”

Could you use this gentle work-saver on your course? Models in $\frac{3}{4}$, 1, $1\frac{1}{2}$ and 2 cubic yard capacities, convertible to flatbeds, **and all with Terra-Tires.**

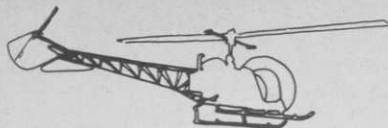
ORDER FROM CHAMPION OR YOUR EQUIPMENT JOBBER



THE CHAMPION COMPANY
Springfield, Ohio 45501

DOO-ALL TRAILERS—WHERE FINE TURF NEEDS EXTRA PROTECTION

For more information circle number 196 on card



Copter

Continued from page 58

ugal spreaders attached to the bottom of the helicopter. For the liquid fungicide and pesticide treatments, a 36-foot boom, fed by two 100-gallon tanks, is used.

When fairways and greens are treated, the helicopter is flown about four feet off the ground at 20 mph. At this height, drift is almost totally eliminated. Spraying missions aren't flown if the wind speed exceeds 15 mph. An approximate 50-foot swath is covered in each pass over a fairway. When a green is treated, one side of the boom is sealed. An outside and inside circular pass is made, followed by a straight pass over the center of the green. The superintendent mixes the solutions that are used, thus controlling the rate of fungicide he wishes to apply. Nozzles with a dozen different size cores, and

filters to match, are made available by the company.

Elm trees also are sprayed by boom. The helicopter is flown about five feet above the tree tops. The helicopter's rotary blade action forces the chemical through the leaves in such a way that a part of the spray bounces back and strikes the underside of the foliage. According to DuPont, the aerial method of spraying trees is much more effective than the ground method because of the turbulence created by the rotors.

Club members and people living near courses haven't fully accepted helicopter maintenance. The choppers are noisy enough that many people have the feeling that they are always flying crash courses and are going to crash on their properties. And, when the choppers drop down to a four-or five-foot elevation, some people become terror stricken. Charges of disturbing the peace occasionally are filed.

On rare occasions the pilots accidentally spray automobiles or houses near the locations where they are working. It usually happens when the wind suddenly becomes gusty. The Clarke company keeps some of its employees standing by to rush to job sites to start cleaning up when this occurs.

There has been quite a bit of research done in an effort to reduce irritating helicopter noise. The Hughes Company, for one, has developed a new tail rotor that muffles noise to the extent that normal conversation can be carried on within 50 feet of a machine.

Improved spraying equipment is also on its way, according to Chuck DuPont. It will integrate airspeed and boom or dispenser output so that coverage will be more uniform than it is now. Better methods of swath control also will be developed so that danger of burn or overdosage from overlapping will be minimized. □

General Golf

4401 SAN FERNANDO ROAD • GLENDALE, CALIFORNIA 91204 • (213) 245-6041

PIONEERS and SPECIALISTS in

3 PAR and EXECUTIVE nite lited GOLF COURSES

DESIGN CONSTRUCTION MANAGEMENT

"THE COUNTRY'S LEADING OWNERS AND OPERATORS"

OWNER of

Arroyo Seco G.C. – Twin Lakes G.C. – Dominguez G.C.
– Van Nuys G.C. –

office

General Golf

LANE-LOHMAN, 4401 SAN FERNANDO RD., GLENDALE, CALIF. 91204