



The copter:

Among the factors offsetting the cost are: the course is sealed off for less time, fungicides take hold faster, and loss of manpower is considerably reduced

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.

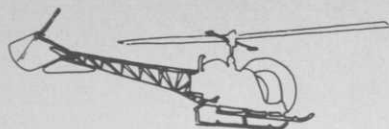
Still, if the cost of spraying from the ground is closely compared with the aerial method,

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



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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 manpower 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-

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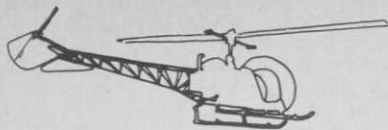
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Copter

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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. □

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