

between zero and zero. The remaining decimal is .067 GPM at 40 PSI; the same as nozzle No. 650067 used in an earlier example, but in the 80 degree series. Thus the GPM capacities of various spray angles, can be duplicated.

Set Pump Pressure

Up to this point we have not discussed pump pressures. To maintain the gallonage requirements per nozzle, pounds of pressure per square inch must be known. When a nozzle chart is not available, this can pose a problem because it is necessary to maintain exacting pressures in order to obtain an accurate rate of discharge from a nozzle.

The formula to obtain the GPA per nozzle has been shown. From our example, we determined that .067 GPM per nozzle was required. To determine the proper pressure setting at the relief valve, or regulator, the following steps should be taken:

- (1) Install all nozzles in the boom.
- (2) Start the sprayer and run at factory-governed speed if engine driven; if power-take-off (PTO) operated, set tractor throttle at predetermined position for the proper ground speed we have selected and the proper PTO speed. This should be the equivalent of 560 RPM on the PTO shaft.
- (3) Set the sprayer relief valve or regulator at an approximate setting of from 40 PSI to 60 PSI.
- (4) Start spraying, open the boom valves to full capacity. Catch the discharge from two or more nozzles in separate containers for exactly one minute.
- (5) Measure the material discharged and compare it with the quantity needed. As we have previously determined, this quantity should be .067 gal., or 8.5 fluid ounces per nozzle. If the quantity discharged is too little, increase the pump pressure slightly and recheck; if the quantity is too great, lower the pressure slightly and recheck.

Several settings may be required the first time this pressure calibration is made, but with a little experience, much less time may be required for later calibrations if they become necessary.

Formula for Acres per Hour

Still another formula we have not discussed is quite useful to determine manpower distribu-

tion for spraying programs. This formula calculates the number of acres sprayed in one hour. The formula to determine this factor is as follows:

$$\frac{Y \times MPH}{8.25 \text{ (constant)}} = APH$$

With the symbol Y, representing the boom width in feet, we multiply the ground speed (MPH), divided by the constant 8.25. The product is the APH, or acres sprayed in one hour.

As an example, let us say you are using a Model 308 John Bean Duo-Flex Boom which has 13 nozzles

spaced at 20 inches and provides a spray swath of 21 ft. 8 inches or 21.67 ft. You have decided on a spray program which requires a ground speed of 4 MPH. This would be your calculations:

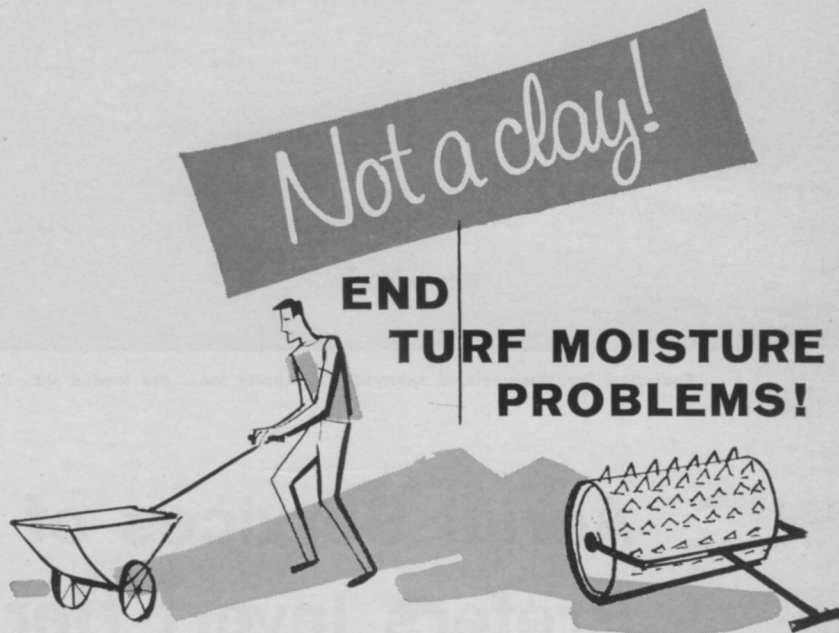
$$APH = \frac{21.67 \times 4}{8.25}$$

$$= \frac{86.68}{8.25}$$

$$= 10.5 \text{ acres per hour}$$

Calibrating sprayer equipment is important in your overall operation. Experiment stations

(Continued on page 28)



New DIALOAM

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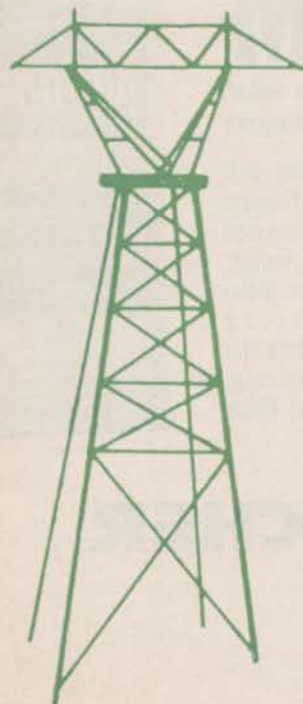
The Eagle-Picher Company
American Building, Dept. W-8
Cincinnati, Ohio 45201



Equipped for pastureland spraying, helicopter tanks are loaded with herbicide from companion service truck.

Aerial Services of Roanoke Prefers Invert Herbicides

for *Whirlybird* Applications



HAROLD F. BROWN, president of Aerial Services Corp., Roanoke, Va., says his personnel were engaged in the aerial application of herbicides when they were still applied in straight oil, or oil-in-water emulsions, long before the advent of the invert, water-in-oil emulsions. It was found that oil was very subject to drift, and in late 1956 and '57, water-borne herbicides were applied.

During application in mid- and late-summer, his men found that straight water and herbicide did not do so well. Water-borne herbicides worked early in the summer, but during dry weather they were subject to drift and caused damage off the rights-of-way.

In 1958, Brown's men began working with Amchem Products on the development of the invert (water-in-oil) emulsion and Spra-disk. Many of Amchem's improvements and refinements made the invert and Spra-disk a workable combination. Today, Brown says, it is one of the most sophisticated systems for aerial application available for



use with helicopters. Since that time, 90% of Aerial Service's applications have been with invert material, and it has applied invert material extensively to utility rights-of-way. Seven valuable years of experience have been completed with this type of application.

ASC sprays over 210-foot power line towers for brush and weed control, virtually eliminating rights-of-way damage and claims by 80%. Sprink application of invert droplets gets more chemical where it is supposed to be, killing brush. Aerial Services works over the entire Mid-Atlantic, Northeastern, and Midwestern United States.

This aerial applicator operates Bell helicopters having a minimum VO435 (vertically opposed, 435 cu. in.) engine with 260 h.p., and also has a STC (Supplemental Type Certificate) for switching to a VO540 engine. These ships carry a payload of 1,100 lbs, and a maximum useful load of 900 lbs.

In the past year Aerial Services has built new hangars and offices and hired personnel that can service up to 10 helicopters. It now owns enough property to build a 2,200-foot, fixed-wing strip. This strip and heliport is located just three miles from the corporation limit of Roanoke, off Route 220, south.

The staff of Aerial Services has been engaged in flying helicopters for 52 years with an accumulation of over 25,000 hours of flying time, and has completed a total of over 6,200 hours of aerial, chemical application since 1956. Besides aerial application to utility rights-of-way, this active applicator is engaged in many other fields of helicopter work, such as: power and pipeline patrol, carrying cargo, aerial photography, forest spraying (both herbicides and insecticides), pastureland fertilizing, fire patrol, fire fighting, aerial surveying, and private charter or lease for corporations.

It is clear to see the applicator was on the right track when his 'copter left a trail of invert spray along this right-of-way.



✓ A new idea for lawnmowers

Air Cushion Mowing

By

DR. ROBERT W. SCHERY

Director

The Lawn Institute, Marysville, Ohio

Air cushion mower glides forwards, backwards, and sideways easily if terrain is level and grass is not too rough. In this rather tall Kentucky bluegrass note there is just a tinge of wind-rowing with the clippings.



TORO'S Flymo introduces an intriguing new idea for lawn mowers. The machine operates on a cushion of air, much like the "hover vehicles" widely publicized in recent years. This new concept won't supplant the conventional wheeled units, but the mower is a surprisingly better mowing device than one might suppose from mere description.

No matter how clever as a piece of machinery, a mower must above all fit its grass and the practicalities of turf care. Kentucky bluegrass, and the fine fescues from Oregon, constituents of most northern lawns, cut well with this air cushion mower. But in many cases they should receive a taller cut than is possible with this new machine.

At high elevations, and in more northerly regions, Kentucky bluegrass survives reasonably well mowed only about 1¼ inches tall. But for middle latitudes, it is questionable whether the new mower would be as advantageous as one which cuts 2 inches or taller. The Flymo blade is not recessed sufficiently for mowing higher than about 1¼ inches, though spacers lower it easily for even shorter cut. And the fact that the machine oper-

ates on a cushion of air, with a "down draft" around the periphery, rather than sucking the air (and grass) up into the cutting area, suggests that this machine is suitable primarily for low-cut turf.

Among the other fine turf-grass species used in more northerly areas, the bentgrasses are outstanding. No rotary, the Flymo included, does as neat a mowing job with closely clipped bent grass as the reel machines do. However, we have been able to achieve satisfactory mowing with the air cushion machine on the more erect Highland type of Colonial bentgrass. Fortunately, Highland is the most used bentgrass in this country, and often a constituent of seed mixtures for areas where bentgrass is adapted.

Light Weight Is Feature

One of the plus features of this new mower is its light weight. The housing of fiberglass is shaped so that a rotor-fan blows a curtain of air down against the ground around the edge, holding the mower consistently level just above the soil. There is scant danger of one's toe slipping into the cutting blade, so close to the ground does the housing ride. Pebbles and other detritus are unlikely to be hurled from the machine, a hazard with some rotaries.

The small two-cycle motor is also light weight. It is designed with a gas tank shutoff nipple, so that the mower can be carried tipped sidewise without gasoline



Design of air cushion mower is simplicity itself. Note the rotor, that throws out a curtain of air, is deflected downward by housing. In the calm center is the rotary cutting blade, activated by the same driveshaft.

drip. The machine is easy to glide from place to place when operating, and is almost as easily lifted for carrying, weighing as it does only 30 lbs.

The mower is best suited to level terrain. We find it more difficult to push than a wheeled mower in tall grass or over uneven soil, for the outer flange of the housing catches on irregularities. Because the air curtain that lifts the mower is out beyond the cutting blade, this mower will not approach as closely to obstructions (for trimming) as will most wheeled rotaries.

One can argue either way about the "reverse" air flow of the Flymo as compared to the "sucking action" of most rotaries.

It does raise dust where the turf is not tight, and it won't cross loose gravel well. On the other hand, it does not blow a jet of grass clippings out of the side, but retains them for rechopping within the housing.

For tidying up around the yard, I would suggest that chemical edging accompany use of this air cushion mower. Cacodylic acid (or some other general vegetation killer that is inactivated by the soil) sprayed around the base of trees and along extremities creates "mulch" that needs no mowing. The wheelless mower can then approach closely enough so that hand trimming is not necessary.

The air cushion mower represents the first revolutionary departure in lawn mowers in years. Toro is to be congratulated on willingness to risk such an extreme product to provide a radically new choice for the public. It should stimulate new ideas in a field where progress has been confined mainly to refinement of existing principles. So far as our experience extends with this air cushion mower, we are pleased with its simplicity, the ease with which it starts and handles, even if not being entirely satisfied with its inflexibility in mowing height and inability to approach obstructions closely.

Dr. Schery's frank appraisal of Toro's new wheelless mower reveals both its advantages and limitations. Suitability, he says, depends upon grass species, cut height required, and kind of terrain.

Tree Beauty: A Necessity for National Welfare, Theme of 41st ISTC Washington Meet Last Month

"Trees in Modern Municipal Beautification" was keynote topic of the week-long International Shade Tree Conference Convention, held in the Washington, D.C. Hilton Hotel, August 16-20. Numerous panel sessions, devoted to the maintenance and preservation of the nation's trees, revealed modern techniques and concerns that have branched from our present-day tree of knowledge.

Deep-rooted motivations to better beautify America were obvious among the more than 800 conferees who were in complete agreement with Mrs. Lyndon B. Johnson's remarks at the White House Conference on Natural Beauty in May. She proclaimed, "Our peace of mind, our emotions, our spirit—even our souls—are conditioned by what we see. There is growing feeling in this land today that ugliness has been allowed too long, that it is time to say 'Enough,' and to act."

Underscoring President Johnson's interest in trees was an impressive ISTC convention ceremony in Lafayette Park, across the street from the White House, during which Secretary of the Interior, Stewart L. Udall, and other Washington dignitaries planted a Scarlet Oak.

Leading authorities from commercial and governmental organizations, and scientists from horticultural and agricultural institutes discussed many problems that exist to conserve and manage one of America's great resources, trees.

Vaydik Reviews Kansas City Streetscape Methods

"A new awareness of the wonderful selection of available plant materials is currently sweeping the country," Frank Vaydik, Supt. of Parks, Kansas City, Mo., said during a panel on "Planting and Replacements of Trees in the Modern City." "We have for many years attempted to restore trees and flowers to our city, and welcome the recent backing from Washington. The simple beauty of grass, trees, shrubs, and flowers is needed in all of our towns and cities.



A tree for The President's Park. Mrs. Orville Freeman, wife of the Secretary of Agriculture, swings an expert spade as she applies finishing touches to the planting of a Scarlet Oak, official tree for District of Columbia, at the "Unity Through Trees" ceremony opposite The White House during opening ceremonies of ISTC meet. Standing to her left is Interior Secretary Udall. To her right is Joseph A. Dietrich, '64-'65 ISTC president. Similar tree-planting ceremonies took place simultaneously in 30 states with their governors participating.

Beauty of any city is limited only by imagination and initiative.

"In Kansas City, we have and prefer to plant trees in nice, wide strips of sod between curbs and sidewalks, but direct planting is often handicapped by concrete.

"We recommend tree wells built into sidewalks that are designed well before construction or reconstruction. If plans for installing tree wells are not made ahead of time, concrete saws provide openings in already-constructed sidewalks.

"Where areaways and utility pits are located under concrete walks, we use fiberglass or concrete boxes for tree planters. Even though the confinement of relatively small boxes is not ideal, planters are often the only solution to provide greenery on a crowded city sidewalk. On a job where three blocks of downtown Kansas City were streetscaped, we used fiberglass planters (30" x 36") that cost \$160.00 each.

"We plant balled and bur-

lapped (B&B), 2- to 3-inch trees. Youngsters sometimes swing on newly planted trees, and bare-rooted trees become damaged easily. Guy wires aren't necessary if you use B&B trees, and water loss is minimized. Although bare-rooted trees are cheaper, we feel the added expense is well justified. Our average cost of 2- to 2½-inch B&B trees is \$27.00.

"A hydraulic log loader is used to lift trees from trucks to holes. After trees are oriented in the hole, we peel back the burlap, and fill the hole with a mixture of peat moss and topsoil. Then we make a ring from excess soil around the tree base and add water.

"Planting is not complete," Vaydik added, "until the tree is tagged. One side of the tag reads: Your Tax Dollar Bought This Tree . . . The Park Department Planted It. A street tree provides eye appeal, shade, comfort and makes for a City Beautiful. This tree was planted by the Park Department to help restore Kansas City's famous forest. This is a fine specimen, well branched, vigorous and planted with care. The Park Department will spray, prune and care for it. This is a (specimen name) tree.

The other side of the tag begins with the statement, "You Can Help." It gives watering instructions and warns that damage is caused by lawnmowers, autos, vandalism and too much fertilizer.

Personnel More Troublesome Than Trees

"To have a well-managed tree replacement program you must have qualified personnel handling the municipal reins without political involvement," Frederick Micha, Monroe Tree Surgeons, Inc., Rochester, N.Y., stated as he listed a few trouble spots encountered by tree companies.

From his conversations with other arborists, Micha found that, "The first basic error is lack of sufficiently qualified people, on the average, with

whom arborists must work." He discovered that in smaller communities, knowledge of tree species is inadequate, and municipal workers are too busy to devote the time required for municipal tree maintenance. "In large cities, tree maintenance supervisors are often appointed politically, and most lack knowledge of requirements for a good tree care program.

"Inspectors and inspections are where we get into the untenable situation of unqualified people making decisions. Here is where all the hard work that went into making the specifications is neglected. Backfills with good topsoil are ignored, peat moss mixtures eliminated, and certain sized stakes and trees forgotten, to name a few.

"Bid limitation is also a problem. Not advocating a great raise in bid limits, I do feel municipal bid limits are too low since plant material is different from a tangible snowplow or truck. Plants are living things that must be nurtured. Also, 5- or 10-year contracts should be considered by professional arborists so that contractors can plan well in advance for scheduling and ordering material as well as know how to plan their work," Micha continued. "For a well-developed program of replanting trees in the modern city, we have to make detailed plans to insure conception, development, and delivery of sufficient quantities of quality trees for our local municipalities."

"Modern homes require many electrical appliances, but combinations of electrical wire and natural beauty conflict," Donald Switzer, Vice President, Electric Operations, Hartford Electric Co., Hartford, Conn., revealed during the panel discussion. "Thirty percent of our service runs are for tree trimming. We find that with sufficient clearance, strong, healthy trees are compatible with power lines. When we have to remove a tree because of power trouble, we buy the replacement. With residential expansion comes an increased need for electric power service. This often means that high voltage cable must be added to serve new areas, and trees under lines of very high voltages must be trimmed to provide extra clearance."



Vegetation chemical control research and techniques to reduce rights-of-way maintenance was topic of this ISTC panel of experts. They are (from left to right): Dr. T. O. Evrard, Dept. of Plant Pathology and Physiology, Virginia Polytechnic Institute, Blacksburg; Herbert O. Drennan, Carolina Power and Light Co., Raleigh, N.C.; Fred A. Ashbaugh (moderator), Supervisor of Forestry, West Penn Power Co., Greensburg, Pa.; Richard E. Abbott, Ohio Power Co., Canton; Hyland Johns, Asplundh Tree Expert Co., Jenkintown, Pa.; and Glen Fuller, Battelle Memorial Institute, Columbus, Ohio.



"Safe tolerances, not useless exercises in mathematics, should be goal of residue detection," Louis A. McLean (left), Velsicol Chemical Corp. secretary, stressed in this group's authoritative review of pesticide use in modern society. Other participants were (from the left, seated) Dr. Richard J. Campana, University of Maine Dept. of Botany and Plant Pathology, Orono; Walter W. Dykstra, Reserch Staff Specialist for Pesticides and Control Methods, U. S. Dept. of the Interior, Washington; and Dr. Paul B. Pearson, President of the Nutrition Foundation, Inc., New York City.



Contract tree work from both tree company and utility viewpoints were put forth by these executives from both interests. Speakers, from the left, were Robert J. Kelly, Detroit Edison Co., Detroit, Mich.; Steve Pugh, Bartlett Tree Expert Co., Stamford, Conn.; R. Larry Rowse (moderator), Portland (Ore.) General Electric Co.; H. J. Cran, Jr., Connecticut Light and Power Co., Hartford; and Keith L. Davey, Davey Tree Surgery Co., Ltd., San Francisco, Calif.

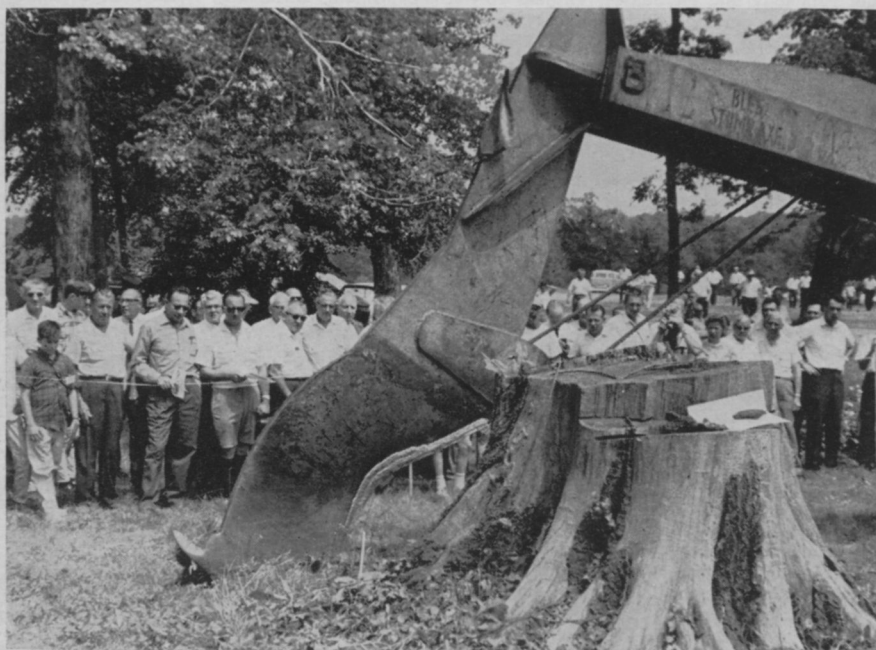
Growth Retardant: Keynote on Chemical Control Panel

Chemical control by growth retardants was the topic of a panel discussion moderated by Fred A. Ashbaugh, Supervisor of Forestry, West Penn Power Co., Greensburg, Pa.

"There was an obvious difference in the growth of elm, mulberry, hackberry, and boxelder tree sections treated with MH-30T (maleic hydrazide) when compared with untreated portions," H. O. Drennan, Carolina Power and Light Co., Raleigh, N.C., told a group of utility



Events for the entire family is the way ISTC program planners arrange activities. This was especially true this year with convention being held in the Nation's Capital. These early arrivals lined up to register and obtain details for trips scheduled for the wives and youngsters.



Over 20 suppliers demonstrated their equipment at U.S. National Arboretum for ISTCers. Shown here is a massive stump axe made by Bles Stumpax Co. Arborists watched this unrelenting claw dig out the huge stump in under one hour, a job that would otherwise have taken three men three days to accomplish. Also shown were skylifts, chippers, sprayers, dusters, chain saws, and stump cutters. Shade of trees protected spectators from 98° temperature during the activity.

arborists. "Also sweet gum and wild cherry showed less growth after treatment, but new growth in treated areas was, after a time, quite vigorous. Various effects resulted from sugar maples treated with MH-30T, and the chemical showed no outstanding effect on honey locust, American elm, and pecan. Stem growth of sycamore, red maple, aspen, Chinaberry, oaks, magnolia, tulip tree, and crepe myrtle was irregular and not reduced by MH-30T treatments.

"Our experience with MH-30T in Raleigh indicates that weather conditions (rainfall and humidity) and soil conditions, as well as choosing the right time to apply, may greatly influence the results given by MH-30T used as a growth inhibitor," Drennan concluded.

"MH-30T at the 10,000 parts per million rate (4 lb./50 gal.) caused some burning of leaf tips of elms and maples in growth inhibition tests in Roanoke in 1964," Dr. T. O. Evrard, Dept. Plant Pathology and Physiology, Virginia Polytechnic Institute, Blacksburg, added. "Leaf tip burning was not severe, however, nor was it objectionable when viewed from the ground.

"American and Chinese elms, Norway maples, silver maples, and linden trees were markedly inhibited by MH-30T. Tulip trees, sprayed in full bloom, apparently weren't inhibited, and no toxic effects were noticed. Sycamores showed some inhibition, and more was expected, but rain washed the chemical from the foliage."

One of the main objectives of

growth inhibition tests in Virginia is to search for a chemical method to regulate regrowth after trimming. Both frequency of tree trimming and highway maintenance costs would be reduced.

Glen Fuller announced that tree growth retardant research is surging forward at Battelle Memorial Institute, Columbus, O. "A test compound that can be incorporated in a lanolin-base wound dressing has given promising results during Puerto Rico experiments. Puerto Rico tests were initiated to facilitate rapid testing by gaining a season over the temperate U.S. The new retardant, in its lanolin base, was applied to cut plant surfaces. Results show that dormant buds are inhibited. In tests using 1% inhibitor dressing, 3½ feet of growth emerged from the pure lanolin check, and only 12 inches grew from treated-cut surfaces. In Connecticut on silver maple, and sycamore in Philadelphia, Pa., there was up to 6 feet of growth on the control and only 6 to 12 inches formed on treated stock."

The new compound, still anonymous, was screened from 150 prospective growth retardants, many of which were declared ineffective during preliminary greenhouse and field tests. Edison Electric Institute initiated the Battelle Institute research program on growth retardants.

Hyland Johns, Asplundh Tree Expert Co., Jenkintown, Pa., discussed problems involved with chemical vegetation control. Johns outlined the necessities for a successful chemical control program which includes continuity of service, adoption of long-range programs, and adequate supervision.

"Chemical control," Johns explained, "is like tree trimming and other phases of line clearance, it's only a tool. Frequently we are prisoners of past experience which limits our concepts and methods.

"Postponement of needed sprays saves short-term dollars, but is costly in long-range economy and public relations. Budget problems, of course, are always with us, but a long-range management program leads to a satisfiable control schedule and reduced cost. Year-round service has several benefits not found with only seasonal operations.

Personnel can be trained and selected less frequently, and work crews may be cut to one-third the number needed for a three-month schedule to do the same amount of work.

"Even though a chemical crew is more profitable than a trimming crew, chemical crews need closer supervision. Careless drift and volatility damage, poor coverage, and complaints are the usual result of inadequate supervision."

Contract Controversy Solved

Speakers on various aspects of tree maintenance contracting were introduced by panel moderator R. Larry Rowse, Portland General Electric Co., Portland, Ore.

"The argument on contracting versus utility crews is resolved by recognizing two points," Keith L. Davey, Davey Tree Surgery Co., Ltd., San Francisco, Calif., told the arborists. "One point is that a contractor must prove his right to tree maintenance work by his reputation and ability to justify his costs to the satisfaction of the utility. Second, utilities should use every opportunity to contract line clearing because today



Untold opportunities now exist as a result of the White House Conference on Natural Beauty, new ISTC President, Olaf J. Andersen, reminded members after taking office. A past president of the group's Southern Chapter, and '64-'65 President-Elect, he knows well the association's responsibility in the new national tree planting and tree care program.

we are living under a private enterprise system. Privately owned utilities should fight for the private enterprise system and continue its good job. Pacific Gas and Electric Co., the largest private utility, has contracted almost all of its work for 30 years with happy results to the public and company."

"In Hartford, Conn., we have found that itemized schedule and bidding forms help foremen

and contractors get together on what to expect from contract tree maintenance arrangements," H. J. Cran Jr., Conn. Power and Light Co., said from the utility arborists' panel. "Schedules should include a record of the present number of plants, time allowed for tree trimming, and plans for additional trim work in future cycles. Our tree trimming report includes: year last trimmed, miles covered, areas trimmed, and total man-hours. For brush control we note the last year sprayed, miles covered, number of sections sprayed, and total man-hours. With man-hour and schedule requirements on record, contracting utilities and tree maintenance operators can see clearly the facilities needed for an economical and satisfactory maintenance program."

In a detailed report on contract line clearance methods used at Detroit, Mich., Robert J. Kelly of Detroit Edison Co. said, "For scheduling and record-keeping purposes, tree service is divided into numbered trimming areas that have geographical township, city, and village boundaries.

"Field operation in each area

(Continued on page 26)

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How To Ready Soil for the Next Crop

After sod is carted off to the market, growers have to dive right in and start all over again. Soil preparation is the foundation for a fertile, healthy stand of lush sod and maximum profits.

Most fields are made ready for the next crop in two steps: (1) cultivating, and (2) adding fertilizer. Irrigation is used before seeding as a cultural practice on some farms, depending on local climate and soil type. Does every grower follow the same techniques? We wanted to find out.

How do you plow and work the soil before reseeding your favored variety? How much fertilizer and lime do you put on your fields? Do you pre-irrigate? During the past few months, WTT staffers asked these and other questions of cultivated sod growers throughout the nation.

Professional growers WTT talked with included: Bill Johnson, Halmich Sod Nursery, Brown City, Michigan; Wilco Sod Nursery owner Allan DeMuth, Monee, Illinois; Edward Jacobsen, owner, West-Turf Co., Tehachapi, California; Wiley Miner of Princeton Turf Farms, Cranbury, New Jersey; Mel Rich, Richlawn Turf Farm, Denver, Colorado, and Triangle Sod Company supervisor, Lonas Amerine, Belle Glade, Florida.

Michigan Peat Seed Bed Not Irrigated

"In Brown City, Michigan it rains enough so we don't need to pre-irrigate, although in areas west of us around Chicago, irrigation is standard procedure," Johnson told us.

"Of our 1,200 farmed," he continued, "about 800 acres is in Merion bluegrass sod. After stripping, we use everything; start out by plowing our peat soil to break it loose, then pack it with a spring-toothed harrow and slowly work from the spring-tooth to a spike-toothed harrow to make a fine bed for seeding,

working the soil as much as time and weather allow.

"We use around 1000 lbs. fertilizer per acre of either 5-20-20 or 5-10-30 (nitrogen-phosphorus-potassium). Years ago we started out with 400 lbs. per acre, and I've been increasing it every year. I don't use lime because we've found that it's unnecessary in our peat soil.

"After the fertilizer is down,

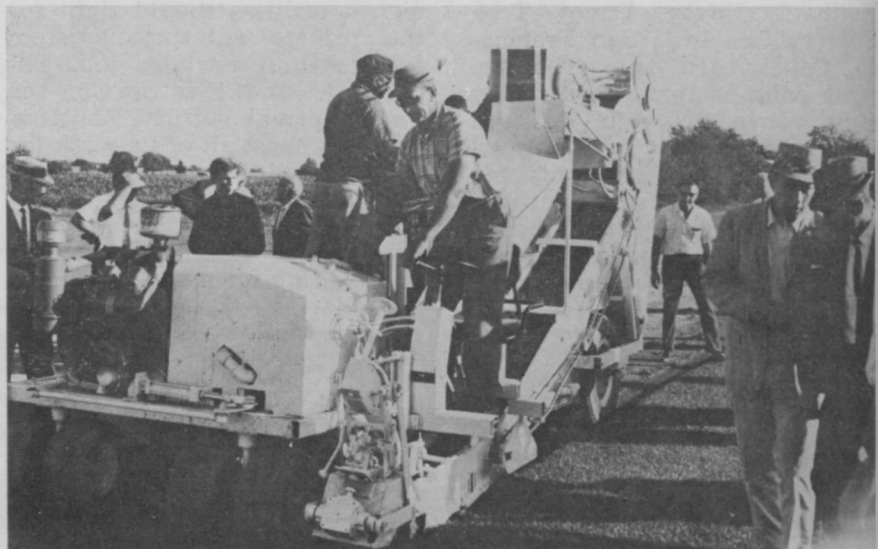
we roll our cullipactor to pack the soil just before seeding."

Fluffy Loam Packed by Rolling in Illinois

"I use a Graham, seven-tine plow to rip up the dirt here in Monee, Illinois," DeMuth explained in telling us about his post-harvest techniques.

"Our soil is a loam type underlain with black dirt. We usually

Princeton Turf Shows Its New Sod Harvester



Demonstration of new sod harvester was big event at recent sod growers meeting in New Jersey.

At a recent meeting of the Cultivated Sod Association of New Jersey, Inc., the first public viewing and demonstration of a self-propelled mechanical sod harvester was held. Unveiling of this new equipment was a giant step forward in the mechanical harvesting of sod. The sod harvester has been developed by Princeton Turf Farms of Cranbury, New Jersey.

Manned by a crew of 3 men, the sod harvester will "lift" and palletize sod at a rate three times as fast as the method of harvesting commonly in use today. In addition, another unique feature is the uniformity and thinness of cut in spite of undulations or depressions in the soil surface.

Striving for further improve-

ment of the current model, Wiley Miner of Princeton Turf Farms already has another model on the drawing boards incorporating additional automated features.

The demonstration attracted a group of 70 individuals comprised primarily of sod producers from New Jersey and neighboring states. The demonstration was followed by a chicken barbecue and a business meeting of the association. Arrangements for the demonstration, barbecue and meeting were under the direction of Dr. Henry W. Indyk, extension specialist in turf management, Rutgers—The State University, and presently secretary of the Cultivated Sod Association of New Jersey, Inc.