

Editorial

This Green Industry we serve has come of age. It is truly viable and recognized as such. Both commercial businesses and consumers recognize that professional service is available and while there are still many do-it-yourselfers, more and more segments of industry and consumers think custom service when they have problems.

Probably the greatest strides have been made among homeowners. Lawn service vehicles are commonplace in most communities. Tree care professionals have long enjoyed acceptance and recognition, but this is new for the custom lawn care professional. In the industrial sector, the labor organizations have been somewhat responsible for the turn to custom factory lawn care. Businesses often find the commercial operator does a better job for them at less money than if they maintained their own company union crews and equipped them properly.

Further gains can easily be made by cashing in on this accrued recognition value. Offering efficient and competent service alone does not always guarantee a thriving business. Many custom operators enjoy more business than they can handle, but this is not true of the majority nor is it likely to continue as this type business

gains stature and more enter the field.

Thus the operator who advertises, promotes, and develops a public relations program will best be able to cash in on this market and build a stable and profitable business. No longer is the yellow page listing sufficient, though it is certainly a must in any program.

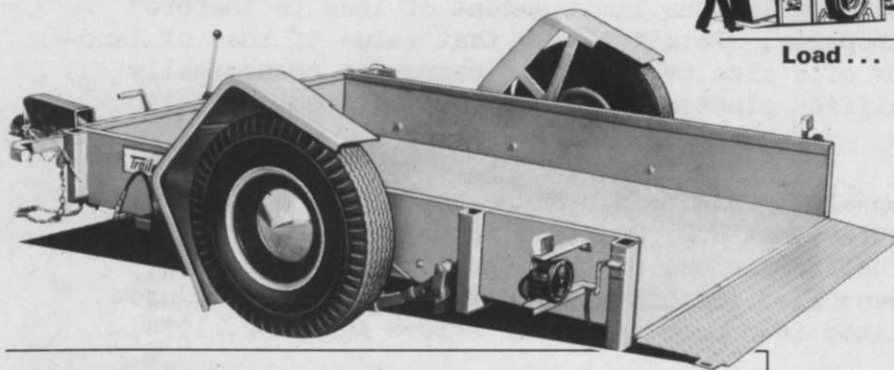
The time has come when direct mail to key prospects, advertising in local newspapers, and perhaps some TV and radio spots can pay dividends. Besides advertising, many opportunities exist, most of which call for more time than money.

Appearances on local radio and TV shows, and on civic programs builds image and gains business. Equally important is an acquaintance with the local garden editor, or at least with the newsperson who handles the green industry news. This editor can be alerted as to timing for the various practices which make up the business and at the time appraised of the need for professional consultation in critical areas where only the commercial operator should attempt the job.

As an industry, we know these ideas are not new. But we also know that many in our industry are not capitalizing on these money making areas of their business.

ONE MANhandling.

...TRAILEVATOR,
the hydraulic elevating trailer that moves
your equipment easily from
job to job.




That's all there is to moving your equipment anywhere you want to. This unique Trailevator lowers to ground level for fast 'roll-aboard' loading, then lifts its own load to hauling position, in just seconds. Lifts and lowers without uncoupling from towing vehicle. Standard trailer hitch attaches to car, truck or tractor. Four models available. Two capacities: 3,000 lbs. and 2,000 lbs. Bed sizes to 5'10" x 10'.

TILTSTER *The low bed trailer that tilts.*

Drop-axle, tilt-type trailer handles loads to 5,000 lbs. Simple, one-man operation. Easy access, tailgate ramp for ground level or low platform loading. Single and tandem wheel models. Bed sizes to 5'10" x 12'.



 **Magline Inc.**

P. O. Box 277, Pinconning, Michigan 48650
Tel: (517) 879-2411

Circle 129 on free information card

Government News Business

Advisory inspections and employer self-inspections, two new programs initiated by OSHA, are hoped to lead a more comprehensive national job safety and health program. OSHA boss, John H. Stender, told the Industrial Safety Equipment Association that early criticism of OSHA's program centered on the fact that, unlike many pre-existing state programs, OSHA did not have any provisions for inspection without citation. He said that self-inspections not only can help employers improve job safety and health conditions in their workplaces, "they also improve employee morale, contribute to productivity, reduce on-the-job injuries, lower insurance costs and provide many other benefits that more than pay for the time, effort and cost involved."

EPA and the Experimental Technology Incentives Program of the National Bureau of Standards have awarded a joint \$300,000 contract to A. D. Little, Inc., Cambridge, Massachusetts to investigate Federal incentives for stimulating private industry research into new pest control techniques. Incentives to be studied include codified registration standards, Federal financial support, improved use of Federal laboratories, Federal insurance and other possible steps.

The Treasury Department has ruled that some electric golf cars imported into the U.S. from Poland have been sold at "less than fair value." The cars have been imported by Melex, U.S.A., Inc., Raleigh, N.C. David Bender, a U.S. Customs Service official, said the case now goes to the International Trade Commission (ITC). The ITC will conduct a three-month investigation to determine what injury, if any, has been suffered by the domestic golf car industry. A decision is expected by September 14, 1975. Clem W. Sharek, executive vice president of Melex, said the decision in no way means the cars will cease to be imported into the country, and that it is still up to the ITC to determine if dumping does exist. The investigation stems from a complaint filed March 14, 1974 by Cushman Motors Div., OMC Corp., Lincoln, Neb., manufacturers of Cushman golf cars.

Internal Revenue Service has been petitioned to change regulations regarding casualty loss of landscape trees and specimen plants by several Green Industry associations. Present regulations limit amount of loss to "before" and "after" value of entire property. Petition asks that value of loss of landscape trees or specimen plants of a size or type that cannot be economically replaced be determined by qualified plantmen based on established evaluation formulas.

EPA says "case closed" on aldrin/dieldrin. Judge Perlman's "Accelerated Decision" on May 27, 1975, states that U.S. Court of Appeals for District of Columbia has found "imminent hazard" in use of these pesticides; therefore, these registrations will be cancelled immediately. However, sale and/or use of aldrin and dieldrin formulated into products on or before August 2, 1974, is still permissible.

A free pamphlet describing EPA's pesticide laboratory services open to other Federal, state and local government agencies is available from EPA. The 12-page pamphlet, entitled "Pesticide Examination Services" lists the biological and chemical test capabilities of EPA labs and field operations in Beltsville, Md., Corvallis, Ore., and Bay St. Louis, Miss. Copies of the pamphlet may be obtained from EPA's Information Center, Washington, D.C. 20460 or from any of EPA's ten regional offices.

KOKET

When you talk about CHEWINGS FESCUE, you're really talking about a combination of several important characteristics.

Germination rate. Seedling vigor. Establishment rate.

At E. F. Burlingham & Sons, we know. Because we've spent the last 70 years experimenting and developing higher quality grass seeds for your use.*

The results speak for themselves.

Recently, Burlingham introduced a superior chewings fescue variety into the United States. Originally developed by plant breeders in Holland, this bright green grass germinates quickly and has an excellent establishment rate. Its name: Koket.



E. F. BURLINGHAM & SONS

We experimented with the seed even further and found it adaptable to different climates and soil conditions. Koket's strong germination rate and seedling vigor produced a fescue that mixed well with other grasses, and proved itself exceptionally hardy—even under adverse soil conditions.

A strong seed performance. An excellent grass. Koket from E. F. Burlingham & Sons.

Just one of the many reasons why... when you talk about KOKET, you talk about Burlingham.

E. F. Burlingham & Sons, P.O. Box 217, Forest Grove, OR 97116. Phone: (503) 357-2141; Telex 36-0274; Cable: Burlingham.

*Bonnieblue, Majestic, Sydsport and Birka Kentucky Bluegrasses and Koket Chewings Fescue.

Buy a Chipper That Fits Your Needs

By KARL P. SCHOEPPNER, JR., Sales Supervisor, KPS Manufacturing, Bay City, Mich.

AFTER YEARS of spending a lot of money, time and labor to trim trees, cut brush, load it onto a truck, haul truckloads a day to the landfill, pay the smiling man at the landfill gate five to fifteen dollars a load, you've had enough. You've decided to increase your productivity, cut your labor costs, and generally improve your tree maintenance operation by getting a brush chipper.

You've seen a few around on various jobs, talked to a number of owners and found out that a chipper can, conservatively, reduce five to eight truckloads of brush and branches to one truckload of chips; free as many as four men for other work assignments; provide a good bio-degradable substance for soil structuring, weed control, ground cover and mulch. Having a chipper is also an easy way of avoiding the ever-increasing watchfulness of the EPA, which frowns on burning brush after a job is completed.

Once the decision to acquire a chipper is made, dig out that equipment guide copy of **WEEDS TREES AND TURF**. Nearly all of the chipper manufacturers are listed in it, so are their addresses. Drop them each a short note asking for literature, specifications, and the name of your nearest dealer. As this information is received, another decision must be made — which chipper, which engine, what kind of equipment should be on it.

The brush chipper you buy should be sturdily constructed of materials that can take a beating day after day without fatigue. Whether it must operate on city streets or open rights-of-way for power lines, the stronger the construction the better. A good rule of thumb is to pick a unit which has been produced for over five years.

Starting from the ground up, wheels should be 15 inches in diameter, semi-drop center truck type, with 7:00 x 15, 6 or 8 ply tires. These will afford maximum service at

minimum cost, and are standard equipment on most machines. The running gear; axle, springs, etc. should be able to carry at least an additional one third of the total machine weight, thus allowing ample capacity for rough service, e.g. potholes, curbs, washouts, gullies, stumps, etc.

The transport, or trailer frame, should consist of structural materials, and be fabricated in such a way as to provide rigid support for the cutting unit and the engine, while allowing the vulnerable engine oil pan, fuel tank and wiring to be completely protected by the trailer frame itself. (Many operators have successfully towed their chippers to the job site over hazardous terrain only to find that the fuel tank or oil pan was somehow punctured during the trip.) A high trailer-to-ground clearance will add extra protection and provide considerable maneuverability on uneven, rocky or stump-covered ground.

While small, four-cylinder engines once powered the majority of brush chippers, 300 cubic inch, 6-cylinder and 330 cubic inch, V-8 gasoline engines are now the most common source of a chipper's power.

The six-cylinder engine is most often used by tree services and utilities. Its good torque characteristics, fuel economy, and long life are important features to consider if the chipper is to be operated under general conditions.

The eight-cylinder engine is more commonly used for heavy-duty requirements. Land clearing, slash removal, large and medium-sized municipal operations often need the extra power and torque this engine provides in situations calling for removal of considerable volumes of large limbs and brush.

Because conditions vary, it is sometimes difficult to determine which engine is correct for a particular application. In many instances

the dealer or manufacturer can offer valuable suggestions and assistance which could eliminate the inconvenience of having an overpowered chipper.

The device which performs the actual cutting or chipping of the wood is subject to a variety of names: cutting cylinder, rotor, cutting head, or chipping head. Most cutting cylinders are available in two basic widths, 12" and 16", but their diameters generally range from 11½" to 16". Chippers with 12" wide cutting cylinders are commonly used for light to medium maintenance work, and are usually powered by 300 cid 6-cylinder engines. The 16" wide cutting cylinder, when driven by a 6-cylinder engine, is ideal for light, medium, and some heavy work. When driven by a 330 cid V-8 engine, the 16" cutting cylinder is well-suited for removals and heavy trimming, as well as light pick-up work. A 12", 6-cylinder chipper should not be used to reduce 6-inch limbs, and, conversely, a 16", V-8 should not be used strictly to chip 2-4 inch branches. A little time spent analyzing the work to be performed will usually result in matching the machine to the general type of job.

All cutting cylinders have a number of removable knives to perform the task of chipping wood. The most widely used system consists of 4 knives, which are usually the full width of the cutting cylinder (straight knife system), and are held positively in place by 4 full-length wedges through which several high-strength bolts are put, to firmly draw the wedges against the knives on one side, and against the cylinder on the other, preventing their coming loose. At least two knife and wedge configurations include a back-up system utilizing a tapered knife which is wider at its bottom

(continued on page 22)

get green carpet service for turf irrigation

Take advantage of the Johns-Manville "Total Support" system to spend water like money.™

"Total Support" means people. The people who have given J-M the finest reputation for technical assistance and service can really go to work for you. These people are J-M and its nationwide distributor network who can work best with you to provide the system that's just right for the job.

"Total Support" also means you now can meet all your irrigation needs with reliable Johns-Manville products.

That means the best quality in components. Like **Buckner®** sprinklers, **Febco®** backflow preventors, **Buckner** and **Binar®** controls and **Johns-Manville** pipe. Together they give you accurate control, ease of maintenance, and efficient use of water. It all adds up to a better, more beautiful environment.

When you're in charge of the maintenance of a lush environment, make

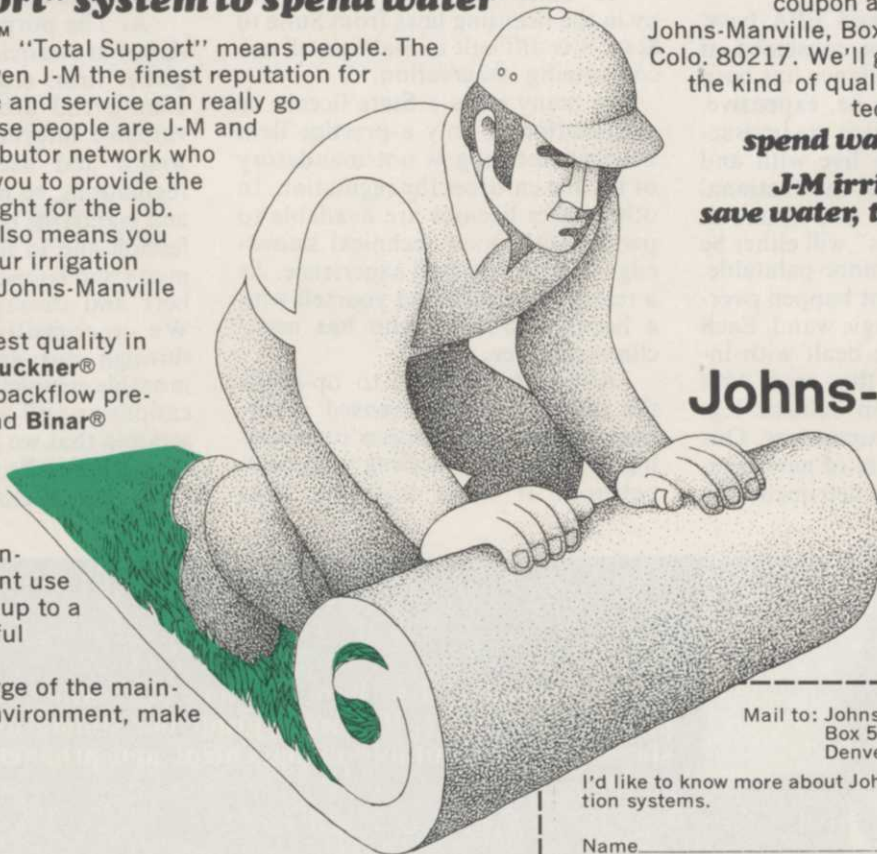
sure you have the Johns-Manville "Total Support" system behind you. Fill out the coupon and mail it today to Johns-Manville, Box 5705-AT, Denver, Colo. 80217. We'll get behind you with the kind of quality, experience and technology you need.

spend water like money

**J-M irrigation systems
save water, time and money**



Johns-Manville



Mail to: Johns-Manville 1X
Box 5705-AT
Denver, Colorado 80217

I'd like to know more about Johns-Manville irrigation systems.

Name _____

Representing _____

Address _____

City _____ State _____ Zip _____

Association Profile

An Interview With Robert Felix, Executive Secretary, National Arborist Association

WTT. Bob, in the May issue of **WEEDS TREES AND TURF** you indicated in the Guest Editorial column that the tree care market is in some instances dwindling. What is the future of the industry?

A. As long as we have urban forests owned by private homeowners, institutions, commercial properties and government we will have practicing, successful commercial arborists. As a result of the monumental concern about our environment, everyone has become interested in the preservation of our trees. As economic conditions permit our markets will grow.

WTT. What effect have Federal Regulatory bodies, such as OSHA and EPA, had on the commercial arborist?

A. Both OSHA and EPA have made tree men more conscious of safe practices. Compliance has been and will continue to be, expensive. Those regulations which are impractical will be hard to live with and through the efforts of the National Arborist Association and others in the "Green Industries" will either be rescinded or made more palatable. However, this will not happen overnight by waving a magic wand. Each issue will have to be dealt with individually as was the case with OSHA and the nylon ballistic leggings for chain saw operators. Our best bet is to be aware of new regulations and if they are detrimental to

the industry make them compatible before the fact and not after. The National Arborist Association is helping to do this with increasing frequency. Our comments on proposed regulations are receiving proper consideration, have been published in the Federal Register and have even been solicited.

Many tree men complain about being regulated unfairly and rightly so, but when we ask for support in the way of letters to congressmen, agencies, governors or anything else they absolutely bury their heads. Like it or not, regulations, certification and safety requirements have done a great deal to up-grade our industry.

WTT. What about State Licensing laws for arborists?

A. Since there is little consistency in the licensing laws from State to State it is difficult to make an all encompassing observation.

In many cases a State license or certification is only a prestige item because licensing is not mandatory or no one enforces the regulation. In other cases licenses are available to people with good technical knowledge and no practical experience. As a result you could find yourself with a licensed arborist who has never climbed a tree.

Although intended to up-grade the industry, many licensed arborists consider certification or licensing as a means of dealing with competition. If State licensing laws

could achieve some degree of uniformity, be awarded to those who have demonstrated a technical as well as practical knowledge and could be policed they would have much more impact.

WTT. Is the typical commercial arborist a better business man today than he was 25 years ago?

A. Very definitely. The pendulum has swung the other way. In most cases today's commercial arborist is not only a technically proficient tree expert but a sophisticated businessman, utilizing all of the modern business techniques available to him. This is as true of the small operation as well as the large. Electronic data processing is now being used by a number of commercial arborists to perform accounting functions. Electronic typewriters hammer out direct mail solicitations, automatically typed for each customer, two way radios expedite service and everybody is cost conscious.

WTT. What is the role of the National Arborist Association in the tree care industry today?

A. The purpose of the National Arborist Association is to bring together firms engaged in the field of commercial arboriculture to share valuable information; to encourage sound and useful legislation and regulations, to maintain good ethics and standards of practice in the profession and to foster a spirit of harmony and cooperation among members and throughout the industry. We accomplish much of this through our annual meeting, our monthly newsletter and other publications as well as the many member services that we provide such as our Home Study Program. In addition I

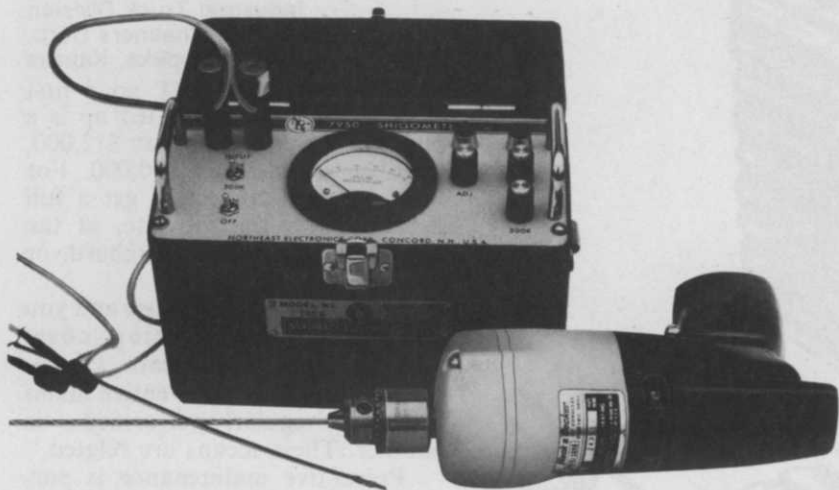
(continued on page 25)



Robert Felix

"It is imperative, if we have any hope of creating and maintaining a professional image, that we upgrade our standards and meet those standards with suitable management and production practices."

NEW ELECTRONICALLY ACCURATE TREE AND POLE DISCOLORATION & DECAY DETECTION



A practical, low cost instrument that pinpoints discoloration and decay in their early stages before they are evident externally. Allows time for early treatment or removal before damage to surrounding area. Ideal for utility pole, park, and recreation area maintenance, and forestry research and inspection.

EASY TO USE Just drill a hole and probe...the Shigometer tells the story.

LIGHTWEIGHT, PORTABLE Shigometer weighs only 3 lbs, 6 oz ...drill and bit weight depends on model selected.

LOW COST, BATTERY OPERATED Complete kit including Shigometer, two 3/32" bits 8" and 12" long, four 8" and two 12" probes, and portable, cordless drill \$414.95. Kit without drill \$350.00.

The Shigometer is an extremely sensitive instrument that accurately measures any amount of ionization to provide detection of both incipient and advanced decay and discoloration. Shigometer indicates the degree of tissue deterioration and the extent of tissue damage. Complete instruction manual and 12 month warranty included with each Shigometer.



FORESTRY AND ENGINEERING SUPPLIES

THE
Ben Meadows Company

553 AMSTERDAM AVENUE, NE, ATLANTA, GEORGIA 30306
404/873-3801, CABLE ADDRESS "BENCO"



3032

Even Tough Ones Do Better With Care

By CURT SCHMIDLER
Senior Service Instructor
Industrial Truck Division
Allis-Chalmers Corp.
Topeka, Kansas

YOU'VE BOUGHT your first rough terrain forklift. Tied up is a purchase price of at least \$12,000, possibly as much as \$30,000. For that price you expect to get a full day's use on the job site, at the lumber yard, saw mill, orchard, or sod farm.

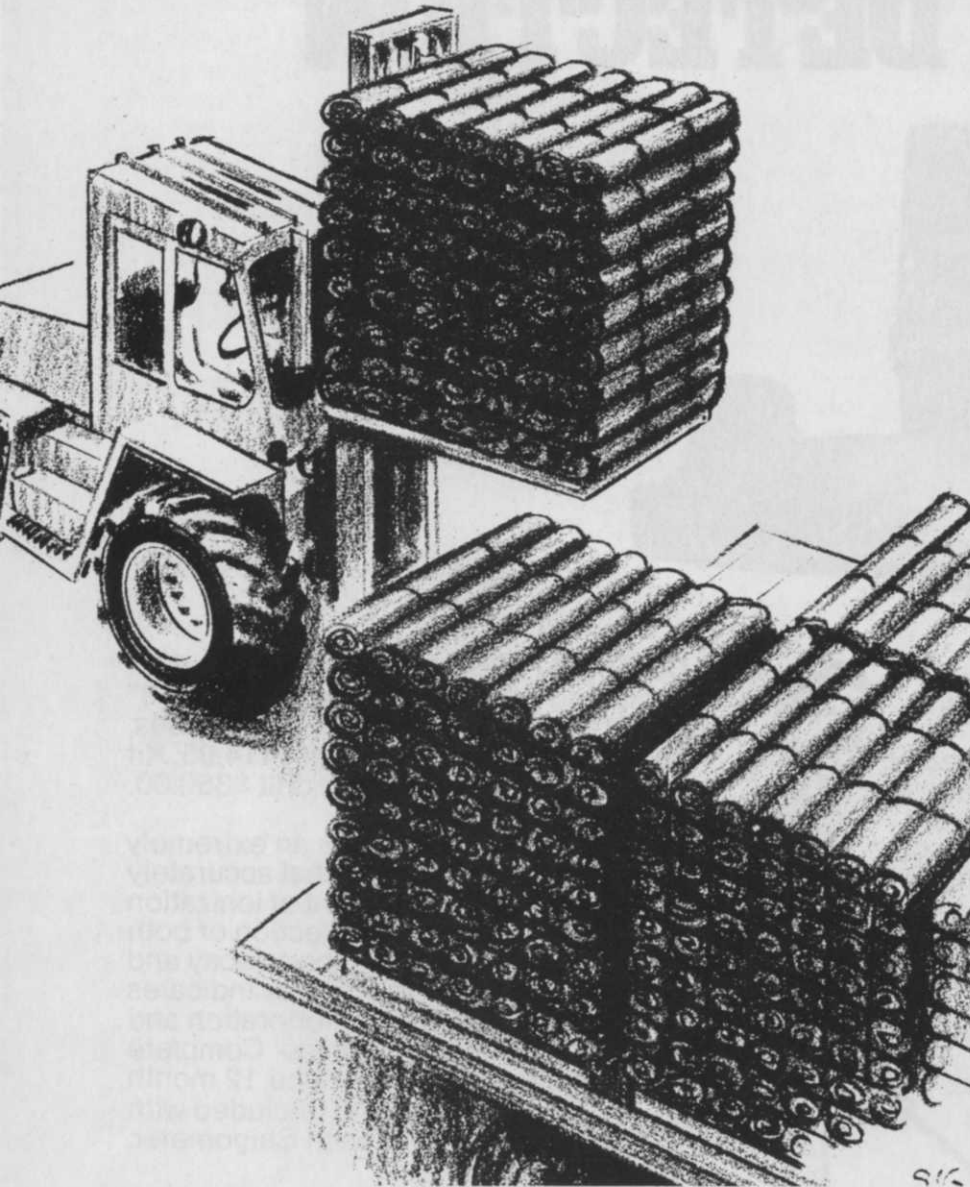
You can get this full use and you can conserve operating costs through a variety of means. Operator training is one, preventive maintenance — regularly performed — is another. These means are related.

Preventive maintenance is particularly helpful in budgeting and forecasting of operating expenses, because the problem with rough terrain forklifts, historically, is operating costs. One reason is operation: light construction users go to considerable effort to hire experienced dozer, loader and backhoe operators, but often anybody who can start a forklift is allowed to use it. Another reason is improper service: owners send their mechanics to manufacturers' schools, learning how to take care of big construction machinery. In contrast, almost no one trains a forklift mechanic. Unskillful operators and mechanics really can create excessive operating costs, primarily in the form of excessive machine downtime.

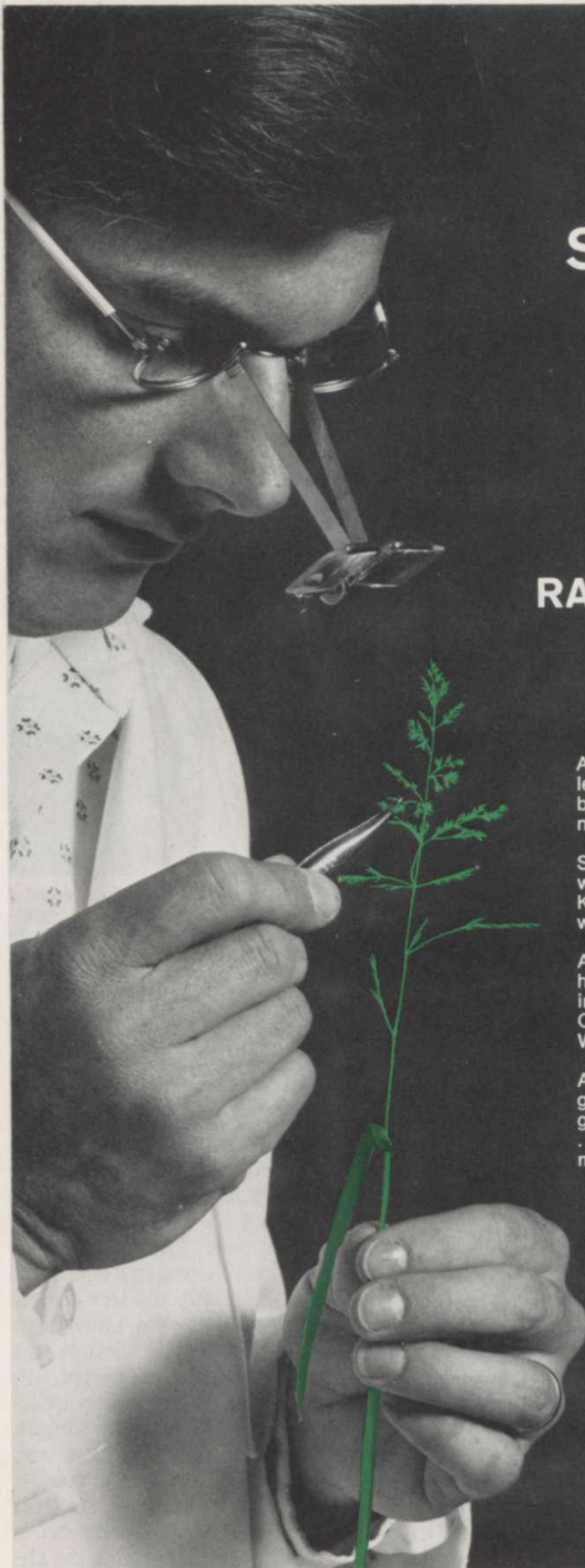
Why people are so casual about caring for this equipment isn't certain, other than rough terrain forklifts are basically similar to the common tractor. Therefore, many owners may feel "everybody knows how they operate."

A second possible reason is related to the intense use of these machines: unloading materials. A truck

(continued on page 29)



**Modern designs build more reliability
into these big-tire vehicles;
Maintenance delivers goods.**



There was no sleeping on
the job in the creation of
a MAN MADE bluegrass!

**SOMEBODY STAYED UP
NIGHTS TO PRODUCE**

Adelphi
KENTUCKY BLUEGRASS

**RATED OUTSTANDING for overall
performance in 10 years of
testing at Rutgers University**

Adelphi Kentucky Bluegrass is, truly, the product of many sleepless nights. The nature of bluegrass is such that hybridization can be achieved ONLY AT NIGHT and, there's no telling what time of night will be the right time.

So, aside from expertise and dedication, many patient night hours went into mating the parents of Adelphi. The result... ADELPHI KENTUCKY BLUEGRASS (U.S. Plant Patent No. 3150) ... was well worth it.

ADELPHI, the first marketed, "Man-Made" Kentucky bluegrass has proven itself... with outstanding overall performance ratings in tests against as many as 60 new varieties... in New Jersey, Ohio, Michigan, Tennessee, Colorado, Rhode Island, Illinois and Washington.

ADELPHI is becoming a favorite of professional turfmen and home gardeners as well. For good looking and natural, richer, darker green color throughout the growing season... excellent density... good disease resistance and tolerance to moderately close mowing, it's "Man-Made" ADELPHI... A FIRST IN TURF.

**ADELPHI has been chosen by the Plant Variety
Protection Office, U.S.D.A., as A STANDARD
FOR DARK GREEN COLOR to which all bluegrasses
applying for plant protection will be compared
for color classification.**

(Use of this statement does not indicate any
approval or recommendation of Adelphi by the U.S.D.A.)

**Try it. This grass shouldn't
give YOU sleepless nights!**

For Information, contact:

J & L ADIKES, Inc.

Jamaica, N.Y. 11423

JONATHAN GREEN & SONS

Kearny, N.J. 07032

NORTHRUP, KING & CO., Inc.

Minneapolis, Minn. 55413

VAUGHAN-JACKLIN CORP.

Bound Brook, N.J. 08805 • Downers Grove, Ill. 60515

Canadian Inquiries: **National-NK Seeds Ltd.**, Box 485, Kitchener, Ont. • **Rothwell Seeds Ltd.**, Box 511, Lindsay, Ont.

Other International Inquiries: **Northrup, King & Co., Inc.**, Minneapolis, Minn. 55413

ANATOMY OF A WOUND

How City Trees React . . . How They Can Be Helped

By Alex L. Shigo and Edwin vH. Larson

Respectively, Chief Plant Pathologist and Editor,

Northeastern Forest Experiment Station, Forest Service, U.S. Department of Agriculture

CITY TREES are especially vulnerable to wounding. They are wounded by automobiles, garbage trucks, lawn mowers, snow plows, construction equipment, people, birds, insects, animals, fires, ice, and storms. Few city trees reach maturity without receiving many wounds.

Any part of a tree can suffer wounds: roots, trunk, branches. Trunk wounds — such as those made when a skidding car gashes the side of a tree — are easy to see. Root wounds may be hidden. Many young trees are wounded during planting, and the wounds may be covered with soil.

Yet the most common and most serious wounds on city trees usually go unnoticed — branch stubs. All trees lose some branches during their lifetimes. After a windstorm, you may see broken branches lying on the streets; but you won't see where they came from. The stub or open scar that remains after a branch is broken off, dies from natural causes, or is pruned improperly, is a serious wound.

And any wound can open the way to the complex processes that can cause decay within the living tree. Even the wounds made by an insect or a nail driven into a tree could be serious.

If a tree is vigorous, the wound will heal rapidly. But if the tree is not vigorous, the wound will heal slowly. Then trouble starts for the tree: wood-inhabiting microorganisms get into it.

How Trees React

Trees respond to wounds in unique ways. After a tree is wounded, its defense system goes into action. First it forms chemical barriers in the wood behind the wound to prevent infection by microorganisms.

These barriers stop most wood-inhabiting microorganisms most of the time. The wound then heals.

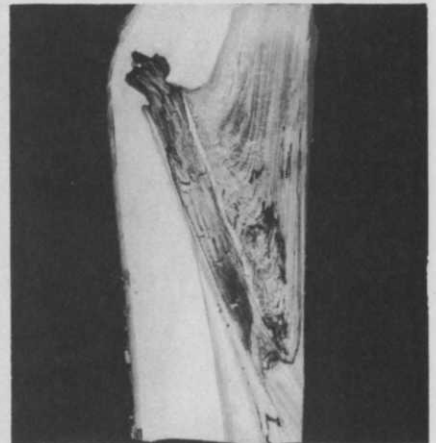
But in other cases, some aggressive wood-inhabiting microorganisms may get through the protective chemical barriers. Then the tree has another line of defense. The injured cambium produces a zone of special cells, a barrier zone that seals off — compartmentalizes — the wood that is infected by microorganisms. The sealed-off compartment is usually a column, no larger than the tree at the time it was wounded. The microorganisms may spread up and down within this compartment, causing the wood to discolor and decay; but they do not spread sideways into the new wood that formed after the tree was wounded.

The result is like a tree within a tree: the old infected tree inside, sealed off from the new tree around it, which year by year puts on new growth rings of healthy wood. So wounds on a tree do not always spell doom. If the young tree is kept vigorous, it will compartmentalize its injury and continue to grow.

But if the tree is wounded again, and again, and again, new compartments will form each time to seal off the infected wood. In time, a complex of infected compartments may so weaken the tree that it succumbs to other destructive forces.

Successions of Microorganisms

Many species of microorganisms are involved in the decay process: bacteria, non-decay fungi, and decay fungi. They infect wounds in a wave action. One group of microorganisms follows another, and each group launches its invasion force against the defense forces of the tree, as all are affected by an ever-changing environment.



Dissection of a healed branch stub on a paper birch tree. The decay microorganisms are compartmentalized within the tissues that were present when the branch died. When dead and dying branches are pruned properly, the wounds heal rapidly and the spread of decay is minimized.

And microorganisms react to each other. One kind may open the way for another kind to invade the tree. Or one kind may block another from infecting the tree.

It takes time for microorganisms to get established in a tree. This gives us time to help the tree after it has been wounded. We know now that it is possible to disrupt the successional pattern of destructive microorganisms by purposely infecting the wound with another fungus. This stalls the decay process and gives more time to help the tree.

So what do you do for the tree? One thing you should not do is smear some wound dressing on the wound and forget it, thinking you have done all you can to help the tree. Wound dressings do not stop decay.

After a tree is wounded, you should remove the injured wood and bark with a clean sharp knife, so