

Introducing the Front Line.TM The first mower built tough enough to be a Cushman.

There's a good reason why Cushman has been around for such a long time: We build equipment that lasts a long time.

And that's never been more obvious than with our new Front Line rotary mower.

Built for keeps.

The Front Line's 72" mower deck is made of 12-gauge carbon steel, reinforced and arc welded. It has a multi-disc PTO clutch, direct drive to the deck gear box with a sealed and lubricated shaft drive. The hydrostatic transmission is driven by two continuously engaged "A" section belts with self-adjusting tension.

There's no need to worry about overloading the Front Line's engine. The combination of our high torque engine and specially designed mower deck allows you to mow tall weeds and fine grass.

Superior performance.

The Front Line's cut in fine grass is so smooth, you won't believe it was made with three separate blades. That's because the blades overlap 1½" to reach every inch of grass in the full 72" swath. Also, the cutting height is adjustable to eight positions, from 1" to 4½" in half-inch increments.

Operating the Front Line couldn't be easier. With individual front wheel brakes, and wheel-type steering controlling a single rear wheel, you get tight maneuverability and better control on varying terrain.

The Front Line's mower deck makes your job easier, too.

It extends
more than a
foot to

one side, so you can trim right up to fences or trees. And it lifts hydraulically for transport over curbs. What's more, a large capacity fuel tank lets you work up to 6 hours between refills.

100% Cushman.

Most rotary mowers use engines built by outside suppliers. Not the Front Line. Its 18-hp, air-cooled engine is all-Cushman. So is the differential. And the PTO drive. Which means all parts and service are provided by your Cushman dealer.

Send us this coupon today, and we'll tell you more about the new Front Line: The only mower built Cushman-tough.

80-CUT-5

YES, I want more information on the new Front LineTM rotary mower. Prove to me that it really is tough enough to be a Cushman.

Name _____

Title _____

Address _____

City _____ State _____

Zip _____ Telephone _____

CUSHMAN[®]

2076 Cushman, P.O. Box 82409, Lincoln, NE 68501



The Front Line. Tough enough to be a Cushman.

Secondly, in January of 1978 we were given the opportunity to expand our crew by 3 positions. The catch was, we could not hire professionals, we had to train our own. Consequently, we developed an 18 month training program combining I.S.A.'s Training and Safety Guide, N.A.A.'s Professional Home Study Program for Arboriculturists, and O.J.T.

I will grant you, our primary concern is public safety, which involves raising trees over streets and signs and eliminating visual obstructions, which brings me back to my concern for Halsted's statement of "The guys say now they don't have time to trim; they only have time to raise trees for the streets".

Regardless of the size of the job or the complexity, our crews hold the health and structure of that tree in equal concern to that of public safety because they know that today's mistake can be tomorrow's accident.

As any other professional trimmer, they care about the tree they trim,

whether it's one limb or a block of street trees.

To use Mr. Halsted's words, "these are the kind of people I have and this is the type of thing we do. It's what makes us number one. We still have a ways to go". Like Mr. Halsted I would say we also have a way to go. I will, however, put our crews among the best.

Adrian Stansfield
Supervisor - Park Operations
Jeffrey A. Hale
Supervisor - Arboriculture
Parks and Recreation Maintenance
Div.
Eugene, OR.

vantages, soon become evident, too. The wood is brittle (in fact, few trees are more subject to breakage from ice accumulation than silver maples, according to W.C. Croxton); the bark is thin and thus easily injured; and older specimens are commonly hollowed out by decay so that they are hazardous. The rooting habits are often a problem, too.

Mr. Chapman does point out that this tree requires pruning on a two or three year cycle to preclude the aforementioned maladies. That advice alone should be sufficient to encourage selection of some other species. How many homeowners are going to invest such time and money in their trees? Most ignore their trees until disaster strikes.

Both Pascal Pirone and George Hepting label silver maple as undesirable, and I shall encourage others to take their advice over Mr. Chapman's.

Edward P. Milhous
Extension Agent
Manassas, Virginia

I was aghast to see in Doug Chapman's article such high praise for silver maples, one of the poorest selections one could make for a shade tree. While the advantages of rapid growth and tolerance of urban adversity may be obvious, the disad-

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- Out front mower deck for full view mowing
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- Vacuum Grasscatcher of large capacity won't hinder maneuverability.
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Spike lasts longer than most other herbicides with fewer pounds per acre!

When applied in accordance with label directions, commercial field use has proven that Spike remains effective longer than other products tested, preventing regrowth and permitting lower application rates in succeeding years.

Spike resists lateral movement!

Spike is non-volatile, control stays where it is needed instead of "shifting" into unwanted areas, enabling specific placement.

Spike gets many vines, brambles and woody plants!

Years of commercial use have proven Spike's effectiveness against a wide spectrum of undesirable and unwanted vegetation, especially the tough perennials tenacious vines, and so called hard to control species, like mullein, pigweed, curly dock, and kochia.

Spike gets many of the brush species the others leave behind!

The most persistent vegetation control problem is **brush**. Spike helps solve that problem almost any time of year . . . and Spike is really tough on white oak, white ash, and big leaf maples.

Spike provides versatility and easy application!

Commercial use has proven equal effectiveness for both of Spike's principal product forms . . . wettable powder for spray application, or granular for mechanical application.

Wherever weed and brush control is the problem . . . in storage yards, parking areas, tank yards, around buildings and warehouses, along road shoulders, fence rows, ditchbanks and railroad spurs . . . the ideal remedy is SPIKE. It does what it promises!

Order Spike from your Elanco Distributor today. Spike should be the **foundation** of your vegetation control program.

Also available as a granular form in 50 lb. bags and a convenient to use dispenser box.

To avoid killing desirable vegetation, read label before application.

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You work hard for a living.

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for quick trimming jobs. Weighs only 11.9 lbs. and has an automatic head that feeds new line with just a tap on the ground.



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sustained chores on everything from grass to light brush. Its fixed head with heavy duty nylon line and 10" weed cutter are both standard.



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Deluxe Trimmer**

**40cc
Back Pack
Blower**

**21cc
Hand Held
Blower**

and blowers good enough Professionals.

30cc
Trimmer/Cutter

21cc
Trimmer

Got tougher jobs? Our trimmer accessories include a 10" circular saw blade for thick grasses, tall weeds, scrub trees and the like.

And, to blow hours of work away in minutes, take your choice of two new Toro® blowers:

Our 21cc hand held blower is just 9.7 lbs. but discharges air at 102 mph. Perfect for "quickie" jobs clearing leaves, dust and light debris off side-walks, flower-beds and smaller areas.

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go, easily and comfortably. Want to know more about the trimmers and blowers good enough to be called Professionals? Call your Toro distributor for more information.



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ORTHENЕ® Tree & Ornamental Spray is a giant step forward in protection. It kills a wide range of insects, on contact and with a lasting residual action. In fact, it's probably the only insecticide you need.

Here are some of the insects it kills: aphids, bag-worms, birch leafminer, tent caterpillar, Douglas Fir tussock moth larvae, gypsy moth larvae, webworms, scales, California oakworm, spring and fall cankerworms, Nantucket pine tip moth larvae, and adult root weevil.

NEW FROM ORTHO

A companion product from ORTHO is ORTHO-MITE™ Ornamental Miticide. It's the perfect solution for mite problems on flowers and ornamentals.

AVOID ACCIDENTS:
For safety, read the entire label including precautionary statements. Use all chemicals only as directed.



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The Land Reclamation Report

The Land Reclamation Report will be a monthly feature of Weeds Trees & Turf Magazine. We stand by in support of those contractors and mine operators who must contend with rules that change monthly. We hope to alert our readers to these changes and to the eventual demand for revegetation services when laws are coordinated with national energy policies and the real value of coal is finally recognized.

OSM alters bonding regulation proposal

The large, long-term bond which represented a major roadblock to small- to medium-sized surface mine operators has been softened with alternatives in the latest proposal from the Office of Surface Mining.

Alternatives include:

- pledging real or personal property in lieu of a bond.
- incremental deposits over a period of time.
- liability limited to the post-mining plans for the land.

Still, operators wince at the five to ten-year length of liability. And there are still problems with the basic law which bother the surety industry.

MARC asks pledge in draft to President

The Board of Directors of the Mining and Reclamation Council of America has drafted a resolution requesting a national commitment to coal by the President and the entire Administration.

The two-page statement summarizes the reasons for a national commitment to coal and asks that:

- a program for conversion of oil and gas burning utility and industrial boilers to coal;
 - removal of inhibitory regulations by EPA, DOI, and the ICC;
 - modification of Clean Air Act;
 - increased export of coal;
- and an overall public commitment to coal and its increased use and production.

ALCA committee plans to beef up program

The Erosion Control Committee of the Associated Landscape Contractors of America has decided to step up its programming, beginning with a summer program to be held at a mine site. Equipment demonstrations under field conditions, observation of a job in progress, and a round table discussion of production problems and techniques are planned. One hope is to provide comparative equipment trials in a field location.

ALCA plans to change the name of the committee to the Land Reclamation Committee and increase its importance in the overall structure of association meetings.

Fifth of surface mines closed in 1979

During one of the most critical energy shortages felt in this nation, the number of surface coal mines dropped by 20 percent because of overly stringent air pollution regulations. Furthermore, it is estimated another 15 percent of those remaining will fail in 1980, according to Ben E. Lusk, president of MARC.

Overkill by the Office of Surface Mining and the Environmental Protection Agency is the main cause of the business failure, despite critical energy needs. A number of candidates for the Presidency have taken positions on coal, but nothing has come from the current administration which offers any relief.

Missouri mine program first approved

The Missouri Department of Natural Resources will receive \$198,193 of fees collected under the Surface Mining Control and Reclamation Act of 1977 to compile data on abandoned mine land problems within the state. Missouri is the first state to receive funds for an inventory.

The information developed will be used to determine plans, priorities, budgets, schedules and appropriate techniques for reclaiming the abandoned mines in the state.

Four watershed projects to get planning aid

Projects in New York, Minnesota, and North Carolina will receive assistance from the Soil Conservation Service to develop watershed plans.

They include Brandywine Creek Watershed, Broome County, NY; Dyke Creek Watershed, Allegheny County, NY; Snake River Watershed, MN; and Moss Neck Watershed, Robeson County, NC. The four projects will protect the watersheds they serve from erosion and siltation and help prevent flooding and poor drainage.

Coal conversion bill may be passed in 1980

Kentucky Senator Wendell Ford said in March that Congress should finish action on a new coal conversion bill outlined by the Carter Administration this year and send it to the President for approval.

The bill, which establishes a two-phased program aimed at displacing one million barrels per day equivalent of oil and natural gas in the electric utility sector by 1990, was presented by Administration energy officials to coal state members of Congress at a briefing in the Capitol. Senate majority Majority Leader Robert C. Byrd (D-W.Va.) said work would begin immediately on developing the proposal into legislative form with a companion bill expected in the House at the same time.

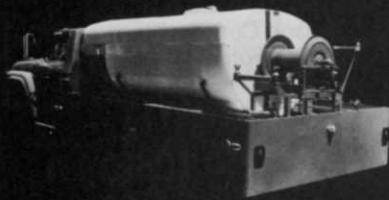
The other senator from Kentucky, Walter Huddleston has added that a policy of stopping the use of oil and gas for utility power generation should be inherent in any national energy policy. Ford said the Administration wants the bill before Congress adjourns.

Pickseed establishes new sales facility

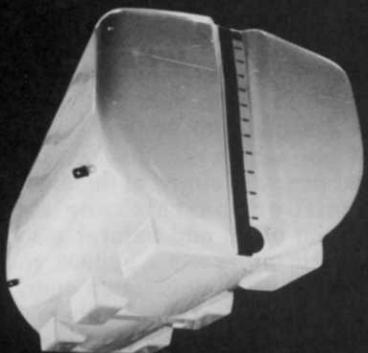
Pickseed has opened a distribution center in Calgary, Alberta, from which it intends to serve the entire province of Alberta, western Saskatchewan, and eastern British Columbia.



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Model #PC 1200 fiberglass tank equipped with fiberglass pump cover, Model #D 200 gallon mixing tank shown mounted on a custom truck body by Strong Enterprises.



Bottom view of the Model #PC 1200 tank showing to best advantage the integral molded mounting base and steel hold-down lugs designed for ease in mounting on your truck and eliminating costly installation.

THE Tuflex Manufacturing process allows a five year warranty on all tanks.

Tuflex is the only manufacturer to specialize in **seamless** fiberglass spray tanks specifically for the pest control and lawn care industry. Remember when craftsmanship was an art...at Tuflex it still is! The exclusive Tuflex process carries a full five year warranty on all handcrafted seamless fiberglass tanks.

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News from page 16

INTERIORSCAPE

Commercial input builds at Florida course

The 1980 National Tropical Foliage Short Course in combination with a "New Concepts" show brought researchers, industry exhibitors, and participants together January 27-30 at the Sheraton Twin Towers Hotel in Orlando, FL.

This year marked the 10th short course, which is now sponsored by the Foliage Education & Research Foundation (FERF) a division of the Florida Foliage Association (FFA). Experts from all parts of the country spoke, with a large diversity present for the interiorscape sections, the largest attended.

"This year's program was the strongest across the board," said Dr. Richard Heriley, a member of the Agricultural Research Center in nearby Apopka. "We had top notch speakers and more industry input."

Talks ranged from tissue culture to production of various plants to tools and equipment used in the greenhouse. More than 1,000 people attended the course.

NURSERY

Study calls for aid to small-scale farmers

More research and technical assistance programs are needed to help small-scale farmers raise their incomes from farm and other sources, according to a recent study by a committee of the Joint Council on Food and Agricultural Sciences.

Some of this research should identify the characteristics of small farms and small-scale farm families, according to the study, which was prepared by the council's ad hoc small farm committee. The research is expected to deal with characteristics, resource management and product marketing, community infrastructure, appropriate technology, quality of life, and policy.

The study calls for federal funding totaling 25 million in research and extension programs aimed at helping solve problems unique to the nation's two million small-scale farmers.

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The strongest Dutch elm disease protection you can give a tree.

ARBOTECT 20-S fungicide helps make it possible to save many elm trees that otherwise would be lost.

Injected into the trunk of the tree, ARBOTECT builds a barrier against Dutch elm disease inside the tree itself. It helps prevent the disease in healthy elms, and can often save infected trees if they are treated early enough.

Used along with sanitation, insect control, and root graft elimination, ARBOTECT can significantly improve the effectiveness of a Dutch elm disease control program.

ARBOTECT differs from other elm fungicides in several important ways:

- It is registered at rates high enough to be effective.
- It is concentrated, requiring much less water for injection, so trees can be treated much faster.
- Thiabendazole, the unique active ingredient in ARBOTECT, is highly effective against

Ceratocystis ulmi, the fungus that causes Dutch elm disease.

- Even though it is more effective and convenient, ARBOTECT costs about the same to use as other elm fungicides.

This year, put ARBOTECT to work in your disease control program. It's the strongest protection you can give an elm against Dutch elm disease.



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protection
for elms.



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VEGETATION MANAGEMENT

By Roger Funk, Ph.D., Davey Tree Expert Co., Kent, Ohio

Can slag be used as a liming material?

There are several types of materials classified as slags. Basic slag is a product of the basic open-hearth method of making steel from pig iron. It has a relative neutralizing value of 50-70 compared to a value of 100 for calcium carbonate (ground agricultural limestone), although it is generally applied for its phosphorus content rather than for its value as a liming material.

How can you tell ants from termites? We were told by a pest control firm that we have termites.

Termites have two pairs of wings of equal length, no eyes and a thick waist, whereas ants have three distinct body sections. You can obtain a USDA publication from your local cooperative extension agent entitled "Subterranean Termites Their Prevention and Control in Buildings" (Bulletin No. 64). You might also obtain a copy of "Scientific Guide to Pest Control Operations" from Harvest Business Publications, publishers of Weeds Trees & Turf.

Do those Japanese beetle traps really work?

They trap beetles, but I doubt if they significantly reduce the injury to ornamentals or turf unless the home owners in an infested area cooperate in a widespread effort. The traps should NOT be placed near susceptible ornamentals.

What grass would you recommend that could tolerate road salts along highways?

Most of the grasses that are rated as having high salt tolerance are native to the western alkaline soils and may not survive the cold winter temperatures of Pennsylvania.

Tall fescue (*Festuca arundinacea* Schreb) tolerates the low maintenance conditions of roadside planting and has good tolerance to road salts. Alkalai grass (*Puccinellia distans*) has reportedly been found growing in salt-contaminated soils along highways near Chicago and may be hardy in your area.

I want to get into the tree fertilization service using a liquid fertilizer with low salt content. I also want to buy an organic or a slow-release liquid fertilizer to use on turf. My company has a high pressure spray rig. Could you find a reputable company for me?

Boots Hercules Agrochemicals Company, headquartered in Wilmington, Delaware, produces a powdered ureaformaldehyde (Powder Blue) which releases nitrogen over a two-year period. Since ureaform is not soluble, the spray tank must have sufficient agitation to maintain a suspension during operation.

Powdered ureaform can be used for both trees and turf, but most lawn service companies prefer a shorter release period. Ashland Chemical Com-

pany in Columbus, Ohio, produces a liquid source of nitrogen (Formolene 25) which has a lower burn potential than urea and, reportedly, a longer residual. Tests are currently underway to determine the release characteristics.

We have been using a triazine herbicide in our nursery, and I think we are getting some injury. Would you describe the foliar symptoms?

Discoloration of leaves may be white, cream or yellow and is usually marginal with interveinal "fingers" reaching toward the midrib.

What is the difference between "slowly-soluble" and "slow-release" fertilizers?

The terms, slowly-soluble and slow-release, are used to distinguish between the mechanisms of release in the soil of nitrogen in a form available for plant absorption. Slowly-soluble materials require some microbiological and/or soil chemical action before they are available for plant utilization. Examples of slowly-soluble nitrogen fertilizers are ureaformaldehyde and isobutylidene diurea (IBDU). The slow release materials are actually readily soluble or readily available materials that have been coated to restrict contact with soil moisture. Sulfur-coated urea is the most common slow-release source of nitrogen.

What are the apparent effects of planting flowers which prefer an alkaline soil in close proximity to shrubs and trees which prefer an acid soil?

The availability of nutrients in the soil is affected by soil reaction.

Some nutrients become more soluble and, therefore, more available for plant absorption when the soil is acid. The so-called "acid-loving" plants require relatively large amounts of these nutrients and will typically display deficiency symptoms when grown in alkaline soils. For example, iron becomes less soluble or "fixed" in alkaline soils, and plants such as rhododendron that requires relatively large amounts of iron become chlorotic from an iron deficiency.

Conversely, certain plants require relatively large amounts of nutrients that are more soluble in alkaline soils. These plants will not perform well under acid conditions.

Reader response

In response to the February 1980 Vegetation Management column, I received a call from the owner of a golf course in Tennessee who has been able to control bermudagrass in bentgrass greens with Tupersan (Siduron). Similar experiences have been reported in the DuPont publication "Professional Turf Manual." Although I cannot recommend a pesticide for an unlabeled usage, I suggest you contact a DuPont representative or golf course superintendent who has attempted this practice if you would like additional information. Thanks for the tip.