

Editorial

EPA. The very idea that any Federal agency could think themselves so indispensable and ubiquitous as the telephone evokes an array of emotions — all negative. Well, the worm has finally turned. And a Congressman from Idaho, Steve Symms, has initiated actions to put an end to the Agency.

Symms introduced legislation in the House calling for the abolishment of EPA. The Bill, HR-9819, was referred to the Government Operations Committee where it remains tied-up in some elections year tactics.

Symms is a member of the House Agricultural Committee whose task it is to look into EPA's Federal Environmental Pesticide Control Act of 1972. For several months, Symms and the Committee found EPA officials "arrogant and impossible to work with". "After weeks of negotiations, they (EPA) wouldn't agree to even the simplest compromise," he said. It was then Symms decided his office had to take action.

"My office is through trying to talk common sense with EPA bureaucrats," Symms said. He and his staff developed

the Bill. And with no co-sponsors, he introduced it to Congress.

"Once people learned of our Bill, we began receiving inquiries from businessmen and trade organizations asking how they could help," he said. One of Symms staff members says she receives some 30-50 letters per day in favor of the proposed legislation.

But Symms is bucking some stiff odds. No other federal agency was ever abolished because their control got out of the system of checks and balances. However, nothing from Capital Hill would surprise us.

Symms predicts legislative action will begin sometime after the first of the year. If the Bill should go so far as to require public hearings, you can bet on some far ranging support. In fact, the Departments of Commerce and Transportation are now questioning EPA legislation and may take similar action in the near future.

We do not feel any successful legislation against EPA would destroy the environment. Nor do we feel that a central agency should control affairs falling under the jurisdiction of a dozen other U. S. departments.

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Government News Business

National movement to abolish EPA is being headed by Idaho Congressman, Steve Symms. His office referred Bill HR-9819 to the Congressional Governmental Operations Committee on September 24, 1975. The Bill asks for abolishment of EPA and a reallocation of all EPA programs back to the original federal agencies. EPA programs would be returned to the jurisdiction of USDA, Departments of Transportation and Interior, and HEW. The Bill's final provision calls for review and revision of all EPA legislation. Symms said his office is through trying to talk common sense with EPA bureaucrats. "I can only conclude that we have finally created an agency whose power is running out of the control of any Constitutional branch of the government," he said.

Weed Eaters, Inc., has moved its distribution center and other operations to 36,580 square feet of the new Beltway Service Center in west Houston. The company has also expanded its molding shop to occupy the approximate 6,000 square feet of space that became available in Windsor Plaza because of the move to the Beltway. Weed Eaters' Beltway office is located at 10515 Harwin Dr., Suite 138, Houston, Texas 77027.

Congress indicated some dissatisfaction with the Federal Environmental Pesticide Control Act of 1972 by not extending FIFRA for three years as requested in July. Instead, a 90-day extension until September was granted. Now, another 90-day extension has been proposed, until December 31, 1975, to enable additional review of EPA's activities. Presently several amendments under consideration would place specific restrictions on EPA.

Century/Rain-Aid Supply Corp. is the new franchised turf distributor for Rain Bird sprinkler equipment serving the greater Chicago area, northern Illinois and northwest Indiana markets. Sources claim this is one of the fastest growing irrigation markets in the U. S.

EPA boss, Russell E. Train, has established an Administrator's Pesticide Policy Advisory Committee. Train said the move is designed to better "articulate the objectives of the pesticides program and the basis on which decisions are made. There is also need to facilitate the input of outside groups in these matters."

Federal Power Commission is considering the decontrol of natural gas. Allocation priorities are established by law and accord highest priority to human needs. As a consequence, shortages must be borne by business. Pending Senate action is S-692 (Hollings, D-S.C.) which would establish higher rates at the well-head for new gas and thus encourage increased exploration and drilling. Bill would also extend Power Commission control to intrastate market, reserve low cost gas for residential users, allocate higher cost gas (new, synthetic natural and liquified natural) to industrial users, and prohibit all boiler uses of natural gas.

EPA has also released a public opinion poll entitled, "Public Attitudes Toward Environmental Tradeoffs." EPA claims the survey reaches several conclusions useful in examining environmental issues. The poll was completed and released by the Opinion Research Corporation. EPA reports no involvement in the preparation or financing of the poll but Opinion Research has given the Agency permission to reproduce and distribute.



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Lansing Street Trees

Tree Spade vs. Bare Root Planting

By ROBERT A. COOL, Assistant Superintendent, Forestry Division, Lansing, MI.

BARE ROOT planting of street trees has been the standard method utilized by the Lansing Forestry Division and most other cities. This premise was seemingly well founded on the concept of low cost, ease of handling, availability of trees, quantity planting in a short time and minimum personnel training.

In 1969 the City of Lansing purchased a Vermeer TS44A trailer-mounted tree spade, one of the first in Michigan. This machine was successfully used for planting larger trees in parks, golf courses and cemeteries. Because the cost of the operation had not been determined, street trees were not planted by this method and it was believed that it would be an expensive luxury for a limited number of residents.

Trouble with the axle of this early model tree spade (since corrected) caused the City of Lansing in 1972 to trade-in the TS44A for a TS44T, a truck mounted model, utilizing the same four-wheel-drive truck. The shorter overall length made street tree planting easier and an increased number of larger street trees were planted. But we were still restricted to replacements of auto, vandal, and gas caused tree losses or where the expenses were paid for the larger-than-normal size tree by the adjacent property owner.

Most of the trees planted during the first four years of operation originated from wholesale nursery block purchases of trees which had grown over salable size, or had been wounded or scarred by nursery equipment, or were salvaged from road and building construction areas. A small percent were taken from Lansing's bare root nurseries. Tree purchases were made for one dollar and later for two dollars per tree for both deciduous trees. The most recent purchase in 1973 found the price per tree at \$7.46 for three-inch average diameter trees. This increase in price was created by a large number of private landscapers operating Vermeer tree spades in the area. The "oversize" trees are now in great demand with most being planted privately in new multiple dwelling areas.

As a result of the low procure-

Table 1. Percentage of tree deaths from major causes by Planting Method

Major Cause of Tree Death	% Dead by Planting Method	
	Bare Root	Tree Spade
Root Failure — Good Site	93%	7%
Borers	92%	8%
Canker	82%	18%
Lack of Water	75%	25%
Vandalism	100%	0%
Other Causes	88%	12%

ment cost, the success of operation of the tree spade, and the suspicion of high bare root mortality, Lansing began a study to examine the current cost of the bare root planting program and to determine the feasibility of converting from bare root to tree spade planting on the streets. Using data accumulated for the preceding nine years, the study showed a survival rate for bare root planted trees at only 59%. Of the 41% bare root mortality, vandalism and auto loss was less than 10%. While this figure caused a renewed effort to reduce the mortality of bare root planted trees, it presented a target cost to compare with the cost of the tree spade method which had a total mortality rate of less than 5%.

The total cost for each planting method was calculated to determine the "cost per surviving tree". The calculations included costs for tree procurement, equipment, supplies and labor for "all activities" necessary to obtain a surviving tree. These activities included the simple act of planting the tree in the ground, office and nursery preparation time, record keeping, wrapping, staking, watering and tree removal for non-survivors.

The results of these calculations showed a shocking total cost of \$77.10 for "surviving" bare root trees and only \$30.45 for "surviving" tree spade trees. It was concluded that 2.53 surviving tree spade trees could be planted at the same cost as a single surviving bare root tree. This cost savings was attributed to:

- 1) the low cost of handling and preparing a tree spade tree for moving;
- 2) the high rate of survival achieved in tree spade planting vs. bare root method; and

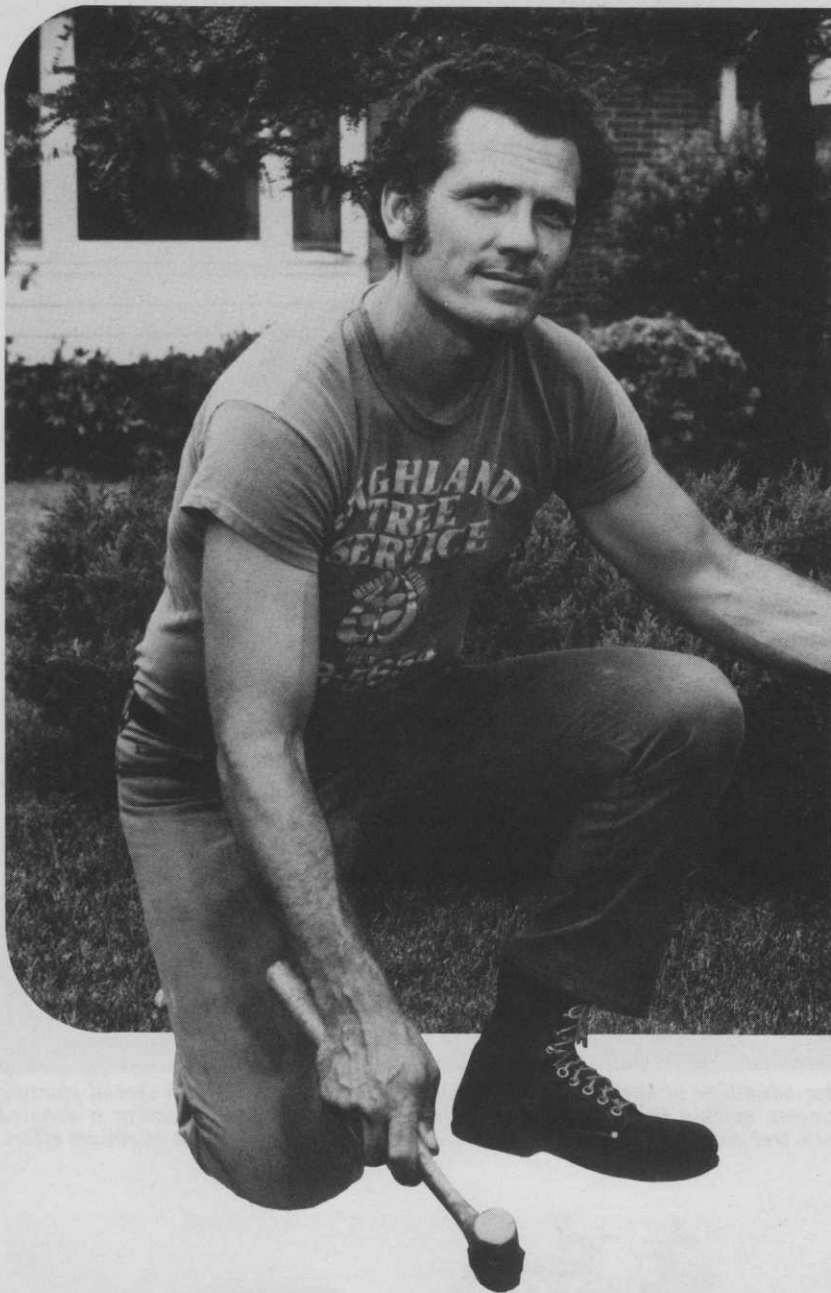
3) the low maintenance costs after planting.

The 1973 study further concluded that the existing backlog of 4,500 street trees yet to plant in Lansing could be done at a cost savings of nearly \$210,000.00 by using the tree spade (\$137,025.00) instead of the bare root method (\$346,950.00).

As a result of this study the Lansing Forestry Division started major street tree planting with the Vermeer TS44T in September, 1973. During the following two years intensive cost accounting was performed on all planting operations to further refine unit costs.

It was immediately determined that not all sites could be planted with the tree spade. Underground utility locating was the first requirement. This activity performed at no direct cost by the local utility and now mandatory by state law has the purpose of avoiding utility breakage and subsequent repair costs, avoiding interruption of customer services, and most important, avoiding the hazard to workers and customers resulting from utility breakage. It is estimated that 10% of all sites had to be planted bare root due to unavoidable conflict. The City of Lansing found another important reason for having underground utilities located which applies to both planting methods. By knowing the utility locations the planting location can be moved as far away as possible from the utilities. Far too many trees are lost or injured by utility repairs within the root area. In addition, the utility companies are very cooperative in this massive locating activity just so future encounters with tree roots can be minimized.

(continued on following page)



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TREE SPADE (from page 14)

The lack of the right kind and size of trees growing in local nurseries also caused a large percent of the locations to be planted bare root.

The tree spade method itself limits the number of trees planted. Because it can plant only one tree at a time, there is a maximum number plantable in a normal work year. This is most dependent on the haul distance variable.

The cost accounting and work records maintained for the last two years has enabled Lansing to more closely look at the differences in the planting methods.

The first figure to stand out is bare root mortality which was reduced below 30%. At the same time tree spade mortality was only 1% for all reasons. During this period the tree spade planted 32% of the trees.

An intensive dead tree autopsy showed that for each cause of tree death, the bare root planted trees were lost at much higher rates than tree spade trees.

Wrapping costs remained the same as the planting method is not the variable, while kind of tree planted does affect this cost.

The number of trees staked were found to be much less than the 20% estimated in 1973. Of the 1,523 trees planted in the fiscal year 1974-1975, 6% of the tree spade trees and 4% of the bare root trees needed to be staked as a planting aid.

Watering and other services given the newly planted trees are considered necessary to get the trees established, therefore is calculated as part of the overall planting cost. It was found that the tree spade trees required at least 10% less of this activity than the bare root trees, saving \$0.30 off the average \$3.00 bare root maintenance cost each year.

The 1973-1974 wage and equipment figures for bare root planting showed a cost of \$21.50 per tree and a tree spade cost of \$29.00 per tree before the 28% bare root and 1% tree spade mortality is considered. The actual planting operation cost corrected for mortality gives \$29.86 for a surviving bare root tree and \$29.29 for a surviving tree spade tree. This figure appears to contradict the 1973 prediction until the tree procurement cost for "surviving" trees is added to the bare root cost (\$17.50 corrected to \$24.30) and to the tree spade cost (\$17.50 corrected to \$24.30)

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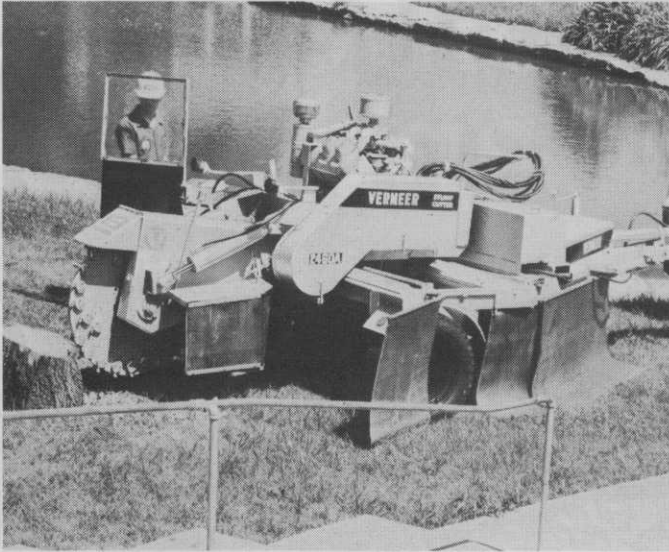


A major advantage of having a tree spade is the capability to perform special planting assignments quickly and cheaply. An instant mini-park or transplanting a donated specimen tree rose to a bicentennial rose bed can be completed with a minimum effort.



Tree spades also come in completely self-contained, trailer mounted units with their own hydraulic system and power plant. But the shorter over-all length of truck-mounted models make street tree planting easier.

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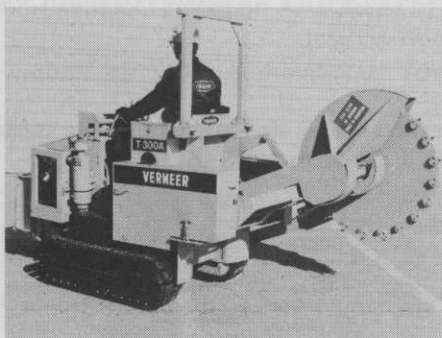
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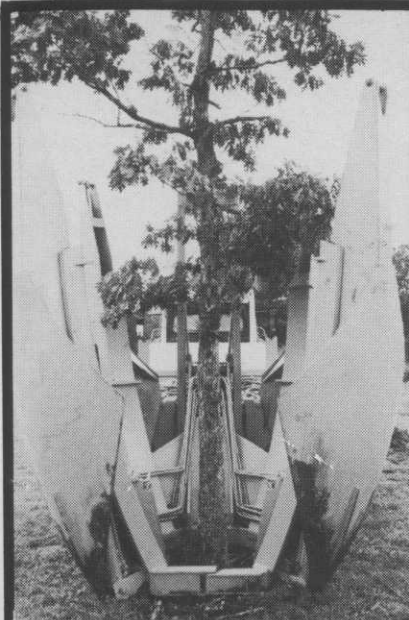
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AERIAL APPLICATION

Techniques, Systems, and Precautions

The following is an excerpt from "Right-of-Way Pest Control: A Training Program for Certification of Right-of-Way Pest Control." Authors for the manual are Virginia Polytechnic Institute scientists; W. E. CHAPPELL, J. S. COARTNEY, and J. A. WEIDHAAS.*

AERIAL application of herbicides to utility rights-of-way is a fast, efficient, economical method of controlling the growth of undesirable woody vegetation.

Since most rights-of-way are restricted in width, and may run through a variety of terrain, it is imperative that the proper equipment and techniques be utilized. Most of the advancement in chemicals and applicator systems has involved the use of a helicopter as the aerial applying vehicle.

Because of its slow flying characteristics and maneuverability, the helicopter readily lends itself to this job. It is capable of flying at or below treetop level, therefore limiting the distance the chemical must fall before reaching the right of way, thereby reducing the possibility of wind drift. The pilot is afforded excellent vision from the helicopter, which further assists in controlling the application.

Aerial Applying Systems

There are several applying

systems available for right-of-way spraying. Some are designed to handle a thickened material to reduce possible wind drift and resultant off right-of-way damage. But more recent equipment is designed to control drift by delivering uniform large droplets.

1. Amchem Microfoil Boom. A method of applying non-thickened material, and still maintaining control of the chemical. The system consists of a boom with many small nozzles. Low pressure carries the material to the nozzles. The nozzles are trimmed into the airflow and the chemical is laid into the airstream and falls similar to a sheet of rain.

2. Amchem 060. This is a recent adaptation of the microfoil boom. Its name is derived from the orifice size of .060 inches. The large uniform size droplets formed with this nozzle penetrate the leaves of foliage and kills small brush at the ground level. Another advantage of the 060 boom is that more precise control is maintained on the swath which enables the pilot to adequately cover brush growing in ravines under a power line and has proven adequate in drops of 200 ft. or more. The

design of the 060 boom practically eliminates fine droplets in the spray pattern when used correctly.

3. Dow R-511. A system utilizing hydraulic or electrical pumps to move the mixture of chemical and Norbak (A particulating agent used to thicken the chemical) into a series of large nozzles. The combination of large orifices, low pressure and thickening agent allow proper control of the material.

4. Conventional Boom. A system utilizing pressure to force chemical through a number of nozzles. The chemical falls to the right-of-way as a mist of various size droplets. The lack of drift control greatly limits the use of a conventional boom.

5. Amchem Spray Disk. This unit is used for the application of Amchem's Envert Emulsion. Properly mixed, the envert material reaches a consistency approximately that of heavily whipped cream. The material is pumped into the tanks of the helicopter and gravity fed to a rotating disk with nozzles. The material is dispensed in large heavy droplets allowing control and placement of the material on the right-of-way.

Aerial Application Techniques

Flying techniques will vary according to the pilot, his experience and capabilities. However, there are several methods or techniques, that if followed, will eliminate off right-

* Chappell is Professor, Plant Pathology; Coartney is Associate Professor, Plant Pathology; and Weidhaas is Professor, Entomology.