

*How States Are Working Around*

# Mowing Hazards: Safety and Beauty

FOREMAN Paul Skelton's men work near the Lawrenceville-Buford Interchange on Interstate 85 northeast of Atlanta. They're mowing part of the 400,000-acre "pasture" the Georgia Highway Department maintains. Inset below is James D. McGee, assistant maintenance engineer, who discusses some of the problems of vegetation management.

VEGETATION management specialists are going to have to become full partners in the designing of highways. Otherwise, it will take a savvy press relations specialist to explain to taxpayers why vegetation maintenance costs are rising rapidly.

There is much emphasis right now on highway safety and beauty. Yet every tree and bush planted, every guard rail and highway marker implanted represent added maintenance costs.

"From the standpoint of maintenance, safety and beauty are a scourge," says James D. McGee, assistant maintenance engineer for the Georgia State Highway Department.

"Don't misunderstand," he added quickly. "We're all for safety and



beauty. It's just that the public must come to understand that every service has its cost."

Georgia, the largest state east of the Mississippi River, is taking a lead in recognizing the importance of vegetation management in highway planning.

State highway chief H. H. Huckeba, since his appointment two years ago, has set up as a part of his operating technique a committee that reviews all new highway plans. McGee, as maintenance specialist, sits on that committee.

McGee sums up the major problems of roadside maintenance in three closely related categories:

- 1) labor;
- 2) litter; and
- 3) physical obstructions by de-

sign (to include those that achieve safety and beauty).

The problem with labor is a shortage of skilled help. Highway engineers know what we mean by "skilled" help. A way for anyone else to understand is to watch an operator maneuver a tractor with a sickle bar around a utility pole and guy wire, two or three town and mileage markers and five or six shoulder reflector markers, perhaps all within 50 yards of each other.

Another way would be to step inside a maintenance shop and watch a mechanic work on practically every brand and model of tractor, truck, and mowing unit manufactured.

If the variety of equipment

wouldn't stagger the public, the quantity would. Georgia, for example, in mowing equipment alone, counts 772 rotaries and 471 sickle and other type mowers.

"A big help would be to have all the equipment the same for a given maintenance section," suggested C. S. Furney, equipment engineer. "That way, a mechanic could specialize. The way it is, our men have to be familiar with a number of machines. Mechanics we have, though, are more versatile than ones you find in a dealer's shop."

The hang-up, of course, is that equipment is bought by bid and other considerations aside from maintenance.

Georgia experiences a 10% to 15% annual turnover in mowing equipment at a cost of around \$100,000.

### Natives Are the Litter Bugs

A public that litters beyond imagination yet demands highway beauty stages perhaps the most frustrating problem for highway departments, Georgia's included.

"We've found the biggest offenders are local people," said McGee. "The transients do a much better job of hitting the waste cans at the rest areas."

Mowers are set at five inches to avoid as many cans and bottles as possible, McGee said. Various methods have been tried to collect litter. A machine called a "can gobbler" was worn out in six months, Furney added.

McGee expects the litter problem to be solved with a type of mechanical finger-raking and vacuum device.

"If anybody comes up with one, we're sure interested."

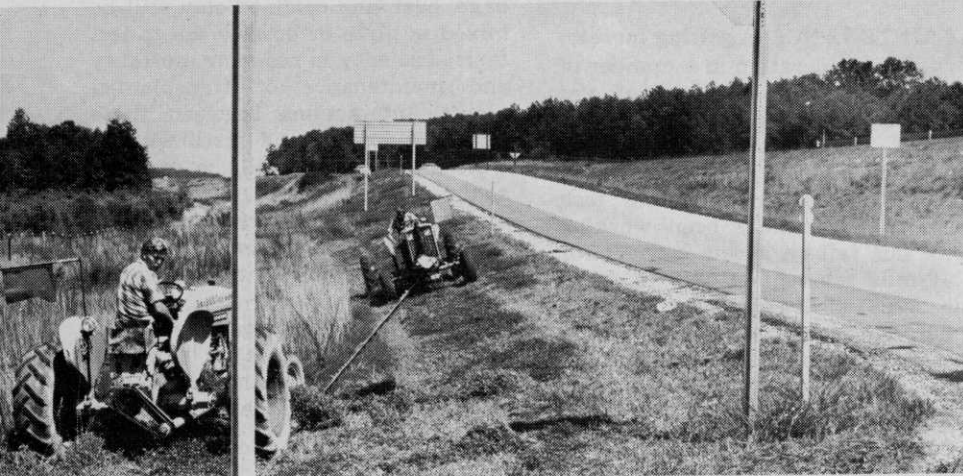
In the meantime, as an additional safeguard a five-inch belting has been added outside of the chain guards on mowers to stop debris struck by mower blades. "The belting does a much better job than the chain alone," McGee said.

"We use flail-type mowers on especially rocky sections," he continued. This type of mower seems to throw an object vertically, while a rotary hurls it horizontally, he explained.

### Herbicide Use Will Grow

Concerning physical obstructions, "specialty equipment and herbicides are going to help on maintenance a lot," said McGee. He mentioned the Slope-Runner mower and guard-rail mower as specific equipment examples.

Georgia has about a dozen experi-



COUNT THE STEEL POSTS that hold various highway markers and you begin to understand one problem of roadway mowing. Increasing emphasis on beauty and safety is requiring more skilled help and special equipment, such as the guard rail mower below.





MANY STATES are experimenting with chemicals to stimulate growth, retard growth, and selectively kill. The Kansas Highway Department demonstration above shows weed control obtained in pfitzer with Casoron G-4.

ments in progress with chemicals, with regard to weed control, growth stimulation, growth retardation, and soil sterilization.

Even with 400,000 acres to mow along 17,500 miles of highways, Georgia's (as are many other states') highway maintenance department is very much involved in planting grass and harvesting a hay and seed crop.

"Grass-growing is erosion control first and beauty second," McGee reminded.

Bahiagrass, Clemson Clover, Bermudagrass, Fescue and Lespedeza are the varieties for Georgia. Some 10,000 bales of hay are harvested for mulch. The cost is 15¢ per bale, a third of a purchased bale. Although there's also a considerable saving in raising seed, only about 10% of the department's total need is harvested.

One limiting factor is again that emphasis on beauty. Folks traveling down the highway like to see neatly manicured rights-of-way. But what it means to the Georgia Highway Department is mowing 400,000

acres from four to eight times between May and November.

**M**AINTENANCE is getting increasing consideration in a number of other states, with examples of cost reduction methods reported from Florida, Pennsylvania, Kansas, and Kentucky.

A joint highway planning task force in Florida has been working since last fall on a new concept for a 16-mile segment of I-10 in Jackson and Gadsden counties.

Safety, beauty and conservation are the announced highlights of the project. But maintenance thinking is reflected.

The task force is composed of designers from the Florida State Road Department, the U.S. Bureau of Public Roads, the Institute of Food and Agricultural Sciences and the College of Architecture and Fine Arts of the University of Florida.

#### Natural Conservation or Revegetation

A University research report describes the project this way:

"The project will consider short and long range costs and effective-

ness of natural conservation and regeneration as opposed to artificial revegetation along interstate highways.

"Treatments along this line will include (1) sections in which the rights-of-way will be completely cleared and replanted, (2) sections that will be predominantly cleared and areas marked for natural regeneration with key trees and plant groups marked for preservation, and (3) sections that will be selectively cleared with large areas marked for conservation of materials and preservation of visual qualities of the landscape.

"Cost accounting studies will be made for the various areas to consider initial cost and maintenance for at least a five-year period.

"Soil amendments such as shredded pine bark, processed garbage, peat, and calcined clay will be mixed in place or borrow soil to test their efficiency in reducing mortality and maintenance of transplanted plants. Interactions between these soil amendments and fertilizer and watering regimes will be studied, again with the idea of reducing maintenance and mortality."

"Anti-transpirant chemicals will be tested during transplanting to reduce water loss until new root systems are developed. These and anti-scald paints will be tried in an effort to reduce mortality among trees remaining on the periphery of cleared areas."

#### Low-Maintenance Vegetation

Low-maintenance vegetation covers are gaining acceptance, notably in Pennsylvania. The state's highway department has planted some 18,000 acres of crownvetch. This flowering plant offers almost the utopian solution to the beauty/maintenance conflict.

Miles of bright lavender, pink and white blossoms are pleasing to motorists and a delight to highway officials and, with good reason, the state's taxpayers. Department officials estimate that crownvetch represents a maintenance saving of more than \$100,000 annually.

#### Kentucky Weed/Brush Control

Chemical weed and brush control are getting special attention in Kentucky.

"It is by use of modern chemicals that great strides have been made in the management of today's highway acreage," K. C. Arnold has said. Arnold is director of the roadside development program for the Kentucky Highway Department.

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A SIMILAR Kansas demonstration, using Casoron G-10, manufactured by Thompson-Hayward Co., Kansas City, shows weed control in fence rows and around trees, areas where mechanical mowers cannot reach.



## Mowing Hazards

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An article in a Dow Chemical Company publication reports that the department began an extensive chemical control program well aware of but well prepared for potential problems.

Spray crews are trained and guided by agronomists as to legal problems involved, the article stated. Crews make a point of telling land-owners what is being done and why it is being done.

They keep a log showing when and what areas are sprayed, what materials were used, wind direction and velocity, and other pertinent details for future reference.

### Test Plots in Kansas

Kansas offers an example of one kind of chemical weed control tests that are going on to reduce rights-of-way maintenance.

Thompson-Hayward Company of Kansas City, set up a dozen test plots, using Casoron, a dichlobenil weed killer. Typical problems areas were selected — interchanges, overpasses, in medians and along fence rows. The tests were started in the winter of '67 and checked last summer.

Two formulations of Casoron weed killer were used. The first, Casoron G-4 (4% active ingredient) was applied to shrubs and trees at the rate of 150 pounds per acre. The second formulation, Casoron G-10 (10% active ingredient) was applied under rights-of-way fences at 200 pounds per acre.

Casoron is a pre-emergent weed killer and is applied during the winter when weeds are dormant. Applied with a hand spreader, Casoron G-4 and G-10 are granular formulations.

Plantings in the test plots included winged eunonymus, pinus sylvestris, maple, pyracantha, honeysuckle and pfitzer, andorra and upright juniper.

A June inspection by Kansas Highway and Thompson-Hayward officials found 11 test plots to be weed free and one with about 85% effective control. There was no evidence of damage to plants treated.

Jack Miller, landscape foreman for the area, commented, "that he was extremely pleased with the results. Good weed control," he added, "has been demonstrated in both ornamental plantings and in fence rows.

"This should mean a savings over hand labor, which is expensive and hard to find."

# Listen . . .

# STRIKE

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**CAN STRIKES** be avoided? Not all, but many could be. In my experience as consultant and college teacher, three common management policies often make labor difficulties inevitable.

*First*, managements assume that the proper policy to follow in personnel and industrial relations is to stick to the letter of the contract—no more, no less.

*Second*, most top executives believe that the most prudent policy to follow whenever improved methods or new equipment or new rates are introduced is to make no special and extensive explanation to union officials or work force.

*Third*, management policy usually assumes that union leaders and negotiators accurately reflect the sentiments and demands of union workers.

### Legalistic Approach

Consider the first—that a legalistic approach to labor relations is the soundest policy. For example, executives wait for stewards to file grievances which are then minutely checked against the contract. Past practice (i.e., precedent) becomes a key factor.

Too many of these executives do not understand that a union contract is not the same as a contract to buy so many lawn mowers or sprayers,

or bags of insecticides or truckloads of sod. Goodwill is more important than the letter of the contract.

But the legalistic approach recognizes only the letter of the contract since this requires no attention from the head of the company and can be delegated to other people in industrial relations. These latter people usually have no leeway outside the explicit written agreement.

Unfortunately, this conduct leads to continual irritation of union stewards, members and local officials, since union contracts do not cover all contingencies. This conduct also leads to excessive use of arbitration, which arouses such animosity among union members that they often welcome a chance to strike back at management when the opportunity arises at contract renewal time.

### No Explanations

A *second* management policy that leads to strike activity is to introduce improved methods and new machinery in order to boost productivity—but not to make any explanation for these moves.

In the absence of advance explanation that the new elements are all being introduced in order to protect the company's future and thus the employees' jobs, the new methods and new equipment are regarded as the forerunners of over-publicized automation and eventual job loss. Under these circumstances, the new equipment reinforces the theory that the interests of management and employees conflict.